The New England
Journal of Medicine

VOLUME 200 MARCH 28, 1929 NUMBER 13

THREE CASES OF ASEPTIC (LYMPHOCITIC) MENINGITIS*

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THREE cases of aseptic meningitis were seen on the Neurological Wards at the Massachusetts General Hospital in August 1928. They all entered the hospital with a complaint of severe headache and vomiting, ran a course of a subacute nature with moderate fever, and all recovered. Clinically they were characterized by the symptoms of a mild meningitis and by the findings of lymphocytes in the spinal fluid without polymorphonuclear cells or organisms.

CASE No. 1, J. L. G., age 23, single, entered the hospital July 30, 1928 with a complaint of severe frontal headache and chilliness. The patient had worked on the morning of his entrance. His present symptoms had begun in June, when he had an attack of unconsciousness while at work and was taken to a hospital. He quickly recovered. About two weeks before entrance he began to have severe frontal headaches.

On admission to the hospital he was irrational and noisy. He responded quickly to spinal fluid drainage, which was repeated 17 times in the course of 27 days. His fever, which ranged between 97° and 101°, became normal at the end of two weeks. His headache disappeared and he was discharged August 25th.

Day	Date	Cells	I. P.	T. P.	Sugar	Chlorides
1st	7/30/28	2500	350	216	42	720
2nd	7/31/28	—	280	228	67	687
2nd	7/31/28	—	280	186	52	699
4th	8/1/28	1479	300	132	75	687
5th	8/2/28	908	400	150	48	714
6th	8/3/28	800	260	132	41	728
7th	8/4/28	566	240	126	68	728
8th	8/5/28	274	140	126	56	719
9th	8/6/28	235	180	144	66	714
10th	8/7/28	286	300	138	55	728
11th	8/8/28	143	155	120	64	719
12th	8/9/28	152	150	63	60	714
13th	8/10/28	131	290	67	66	714
16th	8/13/28	115	265	47	64	687
18th	8/15/28	68	225	48	72	728
23rd	8/20/28	39	250	60	60	687
27th	8/24/28	13	210	—	—	—

FIG. 1. CASE 1. J. L. G.

The reports on the spinal fluid examinations appear as Figure 1. The cells were all lymphocytes. The initial pressure is reported in millimeters of water, the total protein, sugar and chlorides in milligrams per 100 c.c.

This was the second entrance to the hospital of this patient. In December, 1927 he had entered complaining of earache. A paracentesis was done with relief for a few hours. There was marked anemia, his red blood corpuscles being reported as low as 1,730,000 and 1,728,000 per cubic millimeter, the hemoglobin ranging between 35% and 45%. On three examinations there was blood in the stools. None appeared in the urine.

Blood transfusion was done on January 2, 1928 and a few days later mastoidectomy, followed by ligation of the jugular vein. The patient was seriously sick for many weeks, but finally recovered, returning to his home in March. For three months he was free from symptoms until the onset of his present illness.

CASE No. 2, L. E., female, age 19, married, entered the hospital August 13, 1928 with the complaint of frontal headache. About four weeks before entrance the patient had had all her upper teeth removed and three of the lower ones because they were said to be abscessed. Ten days later, after exposure to wet weather, she developed a severe headache. The headache increased in intensity and was associated with a rise in temperature to about 102°. Her neck was stiff and sore and she vomited four or five times before entering the hospital. There was retention of urine for three days, necessitating catheterization.

Day	Date	Cells	I. P.	T. P.	Sugar	Chlorides
1st	8/13/28	143	170	120	54	705
2nd	8/14/28	134	510	47	70	714
3rd	8/15/28	—	165	67	70	693
4th	8/16/28	233	95	57	85	714
5th	8/17/28	154	120	57	70	699
7th	8/19/28	133	108	69	82	690
8th	8/20/28	495	50	80	59	848
9th	8/21/28	199	120	67	71	666
10th	8/22/28	219	100	56	65	666
11th	8/23/28	93	110	50	63	—
12th	8/24/28	56	—	74	65	—
13th	8/25/28	48	100	44	52	679
15th	8/27/28	44	100	42	52	687
16th	8/28/28	13	120	46	—	—
17th	8/29/28	16	110	47	—	—
19th	8/31/28	26	90	48	61	781
22nd	9/3/28	27	105	52	—	—
24th	9/5/28	35	75	43	—	—
28th	9/7/28	9	60	43	—	—

FIG. 2. CASE 2. L. E.

On entrance to the hospital examination showed stiffness of the neck, bilateral Kernig sign and some inequality of the pupils. The disc margins were slightly blurred. The temperature was elevated and ran an irregular course for the first two weeks in the hospital, varying from 97° to 102°. During her stay in the hospital she had considerable headache, blurring of vision and diplopia due to weakness of both external recti muscles. The fundi were

*Read at a meeting of the Boston Society of Psychiatry and Neurology, October 18, 1928.

†For record and address of author see "This Week's Issue," page 676.

normal. She was irritable and emotional. On repeated lumbar punctures her symptoms of headache, irritability, stiffness of the neck and diplopia disappeared and she was able to be discharged September 12th, 1928. Her past history was not important.

The lumbar puncture findings are reported in Figure 2. The cells were again all lymphocytes. The initial pressure is recorded in millimeters of water and the total protein, sugar and chlorides in milligrams per 100 c.c.

CASE No. 3, Mrs. I. G., female, age 35, entered the hospital August 23, 1928 with a complaint of headache, which had begun ten days before entrance and was associated with vomiting. It was mainly occipital. Her temperature had been slightly elevated to about 101 in the afternoons. Her condition on entrance was one of semi-stupor, with marked irritability and resistance to examination. Her neck was slightly stiff. The Kernig sign was not definitely positive. The disc margins were slightly blurred. She was noisy and had a great many complaints. There was some retention of urine and she had to be catheterized. Her temperature in the hospital varied from 98° to 100°. She was relieved by lumbar puncture, which was done twelve times in twenty-three days. The essential findings are reported in Figure 3, the cells being all lymphocytes. The pressure is recorded in millimeters of water and the total protein, sugar and chlorides in milligrams per 100 c.c.

Day	Date	Cells	I. P.	T. P.	Sugar	Chlorides
1st	8/23/28	233	350	73	75	641
2nd	8/24/28	288	200	52	54	638
3rd	8/25/28	222	210	80	54	638
4th	8/26/28	—	190	93	63	679
5th	8/27/28	227	170	83	53	679
6th	8/28/28	244	150	91	—	—
7th	8/29/28	244	120	73	—	—
9th	8/31/28	117	250	64	46	760
11th	9/2/28	201	180	64	—	—
13th	9/4/28	100	200	64	53	—
17th	9/8/28	95	210	61	—	—
23rd	9/14/28	28	220	39	—	—

FIG. 3. CASE 3. Mrs. I. G.

DISCUSSION

The following facts apply to all three cases: Wassermann reactions in the blood and spinal fluid were negative throughout. There were no bacteria seen in the spinal fluid and cultures were negative. Guinea-pig inoculations in all three cases were negative. The gold sol reactions were variable, but early, in all cases, there was a change in the middle range of the tubes. Four figures are given as examples of this change: 1112321000, 1111122200, 1112211000, 1122332100.

In the first case there is some reason to believe that we were possibly dealing with the late effects of a sinus thrombosis. His mastoid operation had occurred six months before and at that time there was definite thrombosis. On the other hand, it should be pointed out that this patient was free from symptoms for an interval of two to three months between his two illnesses and that his second illness was similar in nature to that of the other two patients in all of its characteristics.

In the second case the removal of so many teeth, probably abscessed, might be considered as an etiological factor. In the third case there was no definite etiology suggested. All these cases were, naturally, considered tubercular meningitis on entrance to the hospital. They showed the usual signs of that disease except that the findings in the spinal fluid were not characteristic in that the chloride and sugar estimations were always within the limits of normal, whereas in most cases of tubercular meningitis both the chloride and sugar estimations are below normal. It was obvious, as time went on, that these cases were not tubercular meningitis. There were no polymorphonuclear cells in the spinal fluid; no bacilli were ever seen; cultures were negative; guinea-pig inoculations were negative; and the illness, in each case, terminated in recovery. The second possibility of diagnosis which was considered was syphilitic meningitis. The repeated negative Wassermann examinations, however, and the spontaneous recovery without anti-luetic treatment, were considered sufficient evidence to rule out this disease.

Treatment. The patients were treated by rest in bed and frequent lumbar punctures. The disease seemed to be self-limited. In Case No. 1 an attempt was made to remove an increasing number of cells from the spinal fluid by "forced drainage". This method of treatment was not successful, for in each case, on the three times it was tried, a less number of cells appeared in the final spinal fluid evacuated than that taken at the start.

These three cases could not be classified into any known type of meningitis. It was considered that they were unique, with the possible exception of Case No. 1. There was no indication that the patients suffered from poliomyelitis, herpes zoster, or parotitis, three well-known causes of lymphocytic meningitis.

THE UNDER-NOURISHED CHILD: ANALYSIS OF RESULTS OF CONVALESCENT CARE*

BY T. S. WILDER, M.D.†

IF *functional under-nutrition* is a permissible term, we may apply it to those children who do not measure up to the weight standards of the conventional height-weight tables and yet appear normal in other respects. Often such a child is active, alert, and does well in school. More frequently, however, he belongs to the class portrayed by Max and Grete Seham in their book, "The Tired Child," (Lippincott, 1926), wherein the statement is made that "practically all mal-nourished children are tired

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children." Such a patient is indifferent, fidgety, irritable, and poor in concentration and endurance. In addition he may have postural defects, an unsteady gait, headaches, nystagmus, tremors, other signs of muscular weakness or incoördination; and whereas this type of child may formerly have been full of vitality and enthusiasm, he has gradually become indifferent and socially unadaptable. Emotionally he lacks control, and even his senses, notably sight and hearing, begin to appear dulled.

The above is a rather extreme example of a condition often recognizable in its milder aspects . . . In speculating about the etiology it is difficult to separate cause from effect, but Seham states that *fatigue is usually the primary factor*, and that malnutrition is secondary to it. He believes that a definite constitutional or hereditary factor often influences the development of the fatigue-malnutrition syndrome. However, because of the very insidiousness of the onset of the condition it is permissible, perhaps, to hesitate before accepting this view. Looking at the question from an opposite standpoint one might easily imagine the following course of events, in which, obviously, "fatigue" is the end-result rather than the cause:

I. A healthy child, chiefly by over-activity, but in part because of loss of sleep, poor hygiene, irregular meals, loss of appetite and the like, begins to lose weight.

II. For a time he continues energetic, active, and alert,—thereby further taxing his depleted energy reserves.

III. Finally, his physical resources being exhausted, he becomes too apathetic to be able to cope with the demands of normal activity. He is ultimately both malnourished and chronically fatigued, and as his appetite and self-control forsake him his condition gets progressively worse: a vicious circle has developed.

In diagnosing the presence of the malnutrition-fatigue or fatigue-malnutrition syndrome one relies *first* on a complete physical examination, and *second* on questions and questionnaires designed to furnish information on the functional capacity of the child, or, in other words, on the ability of the child to engage in normal activity without becoming fatigued. These questionnaires are perhaps the main contribution of Seham's book. Besides helping in diagnosis, they furnish the information on which a rational attempt at cure may be based, for it is fairly obvious, as Seham says, (p. 128) that, "Treatment limited solely to change of diet and the prescription of a tonic will remain fruitless. It must get at the core of the trouble, which in most cases is insufficient hours of sleep, excessive physical and mental activity, improper home hygiene, and other irrational habits of living."

Many a poorly nourished child, quite free from organic disease, is sent to the Convalescent Home of the Children's Hospital to be "built up." This, unexpectedly, is found to be a relatively simple thing to accomplish by such measures as the following:

1. Extra rest, sufficient to prevent fatigue.
2. Simple, adequate meals.
3. Attention to the hygiene of the intestinal tract.
4. Moderate amounts of play, outdoors.
5. Medical Supervision in the form of,
   a. Systematic physical examinations.
   b. Measurements of weight.

Such a routine causes striking improvement in virtually all cases. The "spoiled child," usually intelligent to the degree that he is spoiled, (and many of this group may be so described) adapts himself at once to his new environment, as do the great majority of other children. The reason is obvious. In any Convalescent Home there will be greater opportunity for rest, and better regulation of habits than in the average home. Attention to these factors in the care of fatigued or malnourished children results in their immediate improvement. Unfortunately this improvement lasts only a little longer than the "treatment" (that is to say their stay in the Convalescent Home) is continued. A return to the old environment, unless it has been altered in the meantime, spells a "relapse." As shown by the large numbers of readmissions to the Convalescent Home, the vicious circle tends to assert itself time and again, (though perhaps with diminishing severity, each time).

The point just made may raise doubts concerning the value of a Convalescent Home to the under-nourished child. We believe it should emphasize, on the contrary, the importance of improving home conditions during the child's absence. Often the sharp release from a faulty home environment will constitute the initial step in correcting the existing situation. During the ensuing period when the physical condition and the morale of the child are being bettered, the parents should be enlightened tactfully regarding their responsibilities in the campaign. It will thus be possible, often at a single stroke, to lay the foundation for a permanent "cure."

Such a program necessitates close co-öperation between the management of a convalescent home and the allied social service department. It also calls for the assistance, when needed, of the resources of a modern hospital, on the one hand, and of a habit clinic on the other.

STATISTICAL RESULTS

The present study covers 287 consecutive medical admissions; 97% of this group gained weight while at the Convalescent Home.

Regarding the eight children who did not gain, the details in Table I indicate that:

1. The average losses were insignificant.
2. The children were only slightly underweight.

3. The periods in the Convalescent Home, averaging only ten days, were so short as to make us believe that if they had remained longer, they might have gained.

DATA ON THE GROUP OF 8 IN OUR SERIES WHO FAILED TO GAIN WEIGHT WHILE AT THE CONVALESCENT HOME

TABLE I

Case No.	Diagnosis	Loss (ozs.)	Time spent in Home	Lbs. or ozs. under-weight
69	Malnutrition	None	14 days	3 lbs.
102	" & poor posture	"	14 days	7 lbs. 12 ozs.
166	" " "	12	14 days	5 lbs.
168	Malnutrition	None	3 days	1 lb. 12 ozs.
171	Rickets, healed	4	7 days	0 lb. 4 ozs.
201	Maln. & Dis. T. & A.	12	7 days	1 lb. 14 ozs.
208	Osteo., healed	None	14 days	0 lb. 1 oz.
213	Chronic Bronchitis	16	7 days	0 lb. 6 ozs.
	Averages	5 ozs	10 days	2 lbs. 6 ozs.

The Malnutrition Group

Among the 287 in our series, there were 151 children who, without showing gross evidence of any disease, were yet markedly underweight. These were our "malnourished" group, and it is they who made the largest gains, without in a single case manifesting that failure to gain, of which the malnourished child is so often accused.

Analyzing the extent of the gains made by these children, we may proceed either on a percentage basis or may sub-divide the large group into several small ones, each of which may be considered roughly homogeneous. This latter method has been used in constructing Table II.

Table # II, GROUP GAINS.

WEIGHT GROUPS	NO. IN GROUP	EXTREME AGES, in (years)	AV. DAYS IN HOME	AV. GAIN IN OZ.	AV. % BELOW NORMAL ON ADMISSION	AV. % BELOW NORMAL ON DISCH.	AV. GAIN PER WEEK IN LBS.
(A) 20-35 LBS.	25	2-5	26.3	42	11.0	1.5	2.5
(B) 35-50 LBS.	66	5-9	25.7	54	9.7	1.6	2.2
(C) 50-65 LBS.	44	7½-10	25.0	68	11.3	3.8	2.1
(D) 65-80 LBS.	16	9-11½	34.3	92	8.5	1.1	1.6

Although the figures are self-explanatory, several points of interest might well be mentioned:

1) The average gains lay between 11 and 19 ounces a week, and except in group C the approach to normal at discharge was very close.

2) The percentage 'underweight' on admission lay between 8.5% and 11.3% and the recovery per week was very uniform, (2.1 to 2.5%) except in group D where it was only 1.6%. (This difference is perhaps due to the fact that group D was the least 'underweight' on admission.) On the whole, the younger children gained slightly more rapidly in proportion to their weight than did the older ones. All four groups added between 7.5 and 10% to their admission weights, an amount which in a normal child represents more than a year's growth.

3) The average length of stay was between 25 and 35 days, the tendency being for the oldest group of children to stay longer than the three other groups.

4) By far the majority of these children were in the two middle groups, ranging in age, therefore, between 5 and 10 years, and in weight between 35 and 65 pounds.

THE DIMINISHING VELOCITY OF GROWTH AS 'NORMAL' IS APPROACHED

Of more interest, perhaps, than the magnitude of the gains noted above is the manner in which the gains were made. In Table III are listed the weekly increments, in ounces, of ten patients all markedly below normal, who weighed between 40 and 50 pounds on admission.

In nearly all cases the principal gain occurred in the first week with a large gain also in the second week, after which there was a rapid falling off in rate as normal was approached. This diminishing rate of growth is what would be expected, but it also confirms in a novel way, the accuracy of the standard weight tables, by indicating that children on the whole, cease gaining weight when they reach the point which is 'normal' for their height. Since living conditions, and a regular, well balanced diet remain essentially uniform throughout the various weeks of their stay, it is interesting to speculate on the nature of the mechanism responsible for the levelling off of the weight curves in these patients. Is it a decrease in appetite as the child nears normal, or an increased heat production, or metabolic rate, or is it a combination of several such factors?

Chart I illustrates weekly weight curves for the above mentioned group, and for the other similar groups. These curves arrange themselves in a step-like manner, as would be expected.

dren of different weight groups regain weight at approximately the same rate per pound of body weight. Once again there is a slightly more rapid rate evident in the younger groups.

TABLE II.

Case #	1	2	3	4	5	6	7	8	
					weeks				
230	24	14	0	14	8	-4	4	-12	
222	33	14	44	0	8	20	1	1	40 - 50 pound
192	28	20	9	10	-6	7	-1	-4	group, showing
249	42	12	13	12	13	12	13		weekly gains in
122	32	18	3	0	- 9	6	-8	-3	ounces of each
279	30	2	29	1	36	32	10	3	patient, and
270	35	28	17	-14	-5	1	13	-19	averages.
187	58	18	7	20	-9	6			
14	32	35	-5	26	1	-2			
65	22	14	10	-5	4	5	-6		
AVG.	33.6	17.5	7.9	6.4	4.1	8.3	3.3	-5.6	

In Chart II we have the same curves reduced to percentages and expressed as pounds gained per 100 pounds body weight. Here the curves

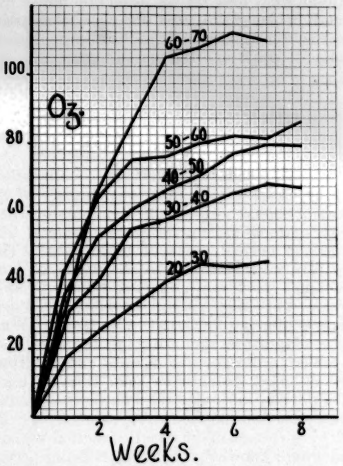

CHART I. Actual gains in ounces of five groups of under-nourished children weighing between 20 & 30 lbs., 30 & 40 lbs., 40 & 50 lbs., 50 & 60 lbs. and 60 & 70 lbs. respectively. There is a diminishing rate of gain as "normal" is approached. (See also Chart II.)

for the different groups have taken practically an identical path, indicating once more, but in a more detailed fashion, that malnourished chil-

SEASONAL VARIATIONS

Much has been written about seasonal variations in weight gaining, and for this reason we

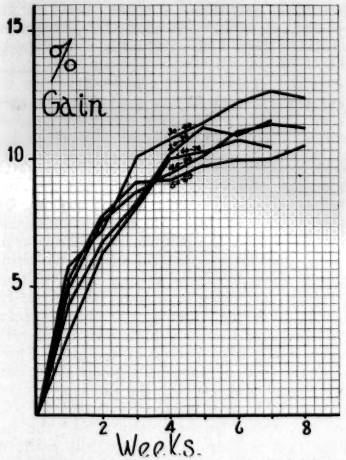

CHART II. Percentage gains in weight of the five groups of under-nourished children illustrated in Chart I, showing that the *rate* of growth is practically uniform for all groups.

have sorted 122 cases of 'functional malnutrition' into their season groups, calculating for each group the percentage gain in weight per week. This procedure is justifiable statistically,

(although the groups so obtained contain children of varying ages and weights), because, as shown above, the rate of return to normal is practically the same for each age group. Furthermore the proportions of the different ages in our series remain about the same throughout the year, though one might reasonably expect that in the summer there would be more children of school age and in the winter more of pre-school age. Results are as follows:

Season	*Gain*, in pounds per 100 pounds body weight, in 10 wks.
Spring	16.3
Summer	17.4
Autumn	21.8
Winter	22.0

Apparently there is a marked speeding up of growth in the autumn and winter, but this conclusion cannot be taken at its face value to indicate that the *season* is solely responsible for the difference. It is quite likely that in the warmer months the children are more active and so get less rest and less sleep than in the cold part of the year. Furthermore, appetite might be stimulated by cold weather, causing a greater excess of caloric intake over normal requirements. Infections of the respiratory tract in the spring might well depress appetite or otherwise affect growth. In other words, while finding definite seasonal differences in rate of return to 'normal,' we cannot be certain that the season in itself has much to do with the phenomenon, nor that in other localities the sum of influences at work might not favor summer rather than winter weather. Obviously, too, the data given above indicating seasonal differences in the rates at which *undernourished children return to normal* cannot be compared with seasonal differences in the *rates of growth of normal children.*

It is of incidental interest in this connection that a recent report of H. D. Clough and J. R. Murlin, (*Am. Jour. Dis Child.*, 1928, vol. 36, p. 435), notes that in some cases at least the most rapid gain in height occurs in the spring and early summer. If this is generally true, it suggests that a child makes first a sudden advance in height in the spring, and then puts on weight, in proportion, in the autumn and winter.

SUMMARY

1. If given the care customarily afforded a semi-invalid, the mal-nourished child of any age who is free from disease will gain weight at a nearly constant rate until he reaches the so-called 'normal' or thereabouts.

2. There is usually a diminishing velocity of growth as normal is approached.

3. A fairly definite seasonal difference in rates of return to 'normal' is manifest in our series, the gains being 33% larger in autumn and winter than in spring and summer.

4. Improvement is rarely permanent if customary activity is re-established in the old environment.

5. Consequently it does not appear advisable to 'invalidize' a child in order to make him 'normal' in weight, unless one also takes pains to correct the unfavorable influences in his environment which so often are to blame.

ON SOME ASPECTS OF THE PHYSIOLOGY OF MUSCULAR EXERCISE*

BY A. V. BOCK, M.D.†

FORTUNATELY for most of us our daily occupations provide enough exercise to keep our bodies efficient to the point of meeting ordinary demands of life. Physical exercise has been considered by the medical profession largely from a qualitative point of view. We think of certain general effects arising from systematic exercise, but there is at hand very little information as to the quantitative changes actually produced in the body both during exercise and as a result of a period of training. There is not, at the present time, a single reliable quantitative means of measuring the physical reserve of the body of a given person. Schneider's test[1] approaches it but leaves undetermined the underlying factors from a physiological point of view. What is happening to the body as a machine as a result of prolonged illness is unknown. We estimate cardiac reserve almost entirely by means of the functional history of the patient. Should our so-called ambulatory cardiac patients be put on the shelf or should they pursue the normal tenor of their lives? This today is a moot question in the minds of most physicians. How much exercise a man at 50 or 60 years may take without harm to himself is unknown from a quantitative standpoint. What are the adaptations occurring in the case of men who make up our football squads, varsity crews, etc.? Changes wrought by such training are a matter largely of objective knowledge. Rules, regulations, and methods for exercise are devised by directors of physical education without an adequate knowledge of what is being accomplished or what should be the goal aimed at. Various tests of physical fitness are used by life insurance companies seeking to eliminate poor insurance risks. One at least of these, Frost's test[2], is meeting with some measure of success, but the real answer to the question at issue prob-

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Read before the Staff Meeting of the Massachusetts General Hospital, December 13, 1928.

†For record and address of author see "This Week's Issue," page 676.

ably lies in a different set of data, as yet not wholly known.

Certain quantitative measurements have been made on man during exercise, notably by Krogh and Lindhard[3] in Copenhagen, Hill[4] and his school in London, Means and Newburgh[5], Y. Henderson and collaborators[6], and Barr and Himwich[7] in this country. Through such work, together with that done on animals by Barcroft[8], Broun[9], and others, knowledge has progressed to the point at which methods can now be applied to the study of many clinical problems and it is to be hoped that much useful information will shortly be available.

Our own work to date has consisted largely in a study of normal men both at rest and during work. Enough ground has been cleared to enable us now to proceed with the general problem of physical reserve in both normal and cardiac patients, of the study of the convalescent patient, of the effect of anemia upon the organism, and of various diseases such as hyperthyroidism.

In our study of the problem of physical exercise from a physiological point of view we have attempted to make as many quantitative observations as possible during the progress of the work being done by a given subject. The data include pulse and respiratory rates, total ventilation, respiratory quotient, output of the heart per minute, blood pressure, and the level of blood bicarbonate and blood lactic acid. Calculations were made of the saturation with oxygen of the blood returning to the right heart, and the stroke volume of the heart, or output per systole.

A study has been made of the physiological state of four subjects during work on a stationary bicycle. One subject, Clarence DeMar, is the foremost Marathon runner of the country. The other subjects, D. B. D., A. V. B., and C. V. C., lead sedentary lives. Two of them, D. B. D. and A. V. B., represent about the average physical condition found in non-athletes. The subject C. V. C. had seldom indulged in any form of exercise except walking. Pertinent data concerning each are as follows: DeMar—age 39, height 163 cm., weight 61.5 kg., vital capacity 5,500 c.c.; D. B. D.—age 35, height 180 cm., weight 71.5 kg., vital capacity 4,700 c.c.; A. V. B.—age 38, height 177 cm., weight 71.5 kg., vital capacity 4,200 c.c.; and C. V. C.—age 25, height 163, weight 59 kg., vital capacity 3,800 c.c. Our observations on these subjects range from a state of rest to a grade of work requiring ten or more times as much oxygen as that needed to maintain the body at rest. The experiments were conducted over periods of time from 2 weeks to 6 months.

For detailed data of these experiments the reader is referred to a previous paper[10]. A brief summary of them only can be given here.

We found DeMar's pulse rate while sitting on the bicycle averaged 58 per minute; during hard work on the bicycle it was 120. For the other subjects at rest the pulse rates were 70 to 90 during rest, and 160 or more during hard work. The slow pulse of athletes has been discussed in the past by Buchanan[11], Y. Henderson[6], and others. It is an outstanding characteristic of athletes in good condition. The resulting increase in total diastole of the heart per minute augments cardiac efficiency. We found that the pulse rate alone during work was a good index of physical fitness in each of the four subjects.

The amount of blood pumped by the heart was found to increase in direct proportion to the increase in the amount of oxygen required for the work being done. The data give no indication of failure of the heart as a pump, but they show a striking difference between the heart and periphery of the athlete and that of the non-athlete. For example, the stroke volume, or output per systole, in the case of C. V. C. and A. V. B. is about 70 c.c. at rest, for D. B. D. about 100 c.c., and for DeMar about 140 c.c. In other words, the stroke volume of the athlete at rest was double that of two of our subjects. During work DeMar's stroke volume increased to about 180 c.c., that of D. B. D. to 150 c.c., that of A. V. B. to 128 c.c., and that of C. V. C. to 93 c.c. This difference in DeMar's favor makes it possible for him to increase the output of his heart greatly with a comparatively small increase in his pulse rate These findings are of interest especially since DeMar's heart, according to x-ray measurements, is normal in size. They suggest that his heart muscle is capable of much greater powers of contraction and relaxation than is the case in the non-athletic heart. Such adaptability of the heart muscle represents an accommodation to increased use. No x-ray pictures of the heart taken during the progress of work were available until the recent work of McCrae, Eyster and Meek[12]. These workers found a general tendency for the heart to increase in size, about 5%, during hard work, followed by a diminution in the size of the cardiac area after work stopped.

Blood pressure measurements showed that DeMar's systolic pressure reached 165 mm. during severe work, while in the subject C. V. C. the same pressure occurred when the work done was only one-half that done by DeMar. This suggested the possibility to Dr. J. H. Means and one of us (A. V. B.) that some light might be thrown on the mechanism involved by a study of the elastic properties of the aorta, obtained post-mortem. With the aid of Mr. Paul Bauer of the Cruft Laboratory this study has been started, a preliminary report of which has been published[13]. It seemed not unlikely that DeMar's aorta, by reason of the demands placed upon it, might have developed an elastic response not common to that of the non-athlete. This would act as a buffer against the increased systolic output of the heart and tend to keep blood pressure at a comparatively low level. A

subject, A. F., unaccustomed to hard work, developed a systolic pressure of 260 mm., while working on the bicycle, the work done being of the same order as that done by DeMar. There is in these data the suggestion of another illustration of the fact that function and use go hand in hand. Very few observations on blood pressure during work have been made, but we have reason to believe that some of the disasters occurring during, or immediately after, severe effort may be attributed to sudden rise in systolic blood pressure in subjects who, as a rule, lead sedentary lives.

Many other factors presumably enter into the complex mechanism regulating blood pressure. It is conceivable that the diameters of arterioles and capillaries supplying the muscles of an athlete are greater than those of the non-athlete, thus lessening peripheral resistance. It is possible that stricture of small and large vessels in the legs by the muscles during bicycle riding may be more pronounced in the non-athlete due both to muscles less well developed and to less perfect co-ördination of the moving parts with the body as a whole.

Adaptations of the body as a machine in caring for the excess metabolism generated by physical exercise are notable, but none more so and perhaps none more important than the development of the mechanism by means of which the reactions of the body are kept constant. Measurements made of the blood bicarbonate and blood lactic acid in the case of DeMar show almost no changes from a state of rest to work requiring a metabolism of 3 liters of oxygen per minute, twelve times that of rest. The subject C. V. C. develops increasing amounts of lactic acid in his blood when the work done requires a metabolism of only 800 c. c. of oxygen per minute. Lactic acid rapidly increases in the blood of this subject, approaching 100 mgs. when he is doing the hardest work of which he is capable, i.e., requiring about 2 liters of oxygen per minute. His blood bicarbonate falls almost inversely as it is called upon to neutralize free lactic acid. In the subject A. V. B. blood lactic acid begins to rise rapidly after the work done requires a metabolism of 1200 c.c of oxygen per minute or more, and in D. B. D. after the metabolism reaches about 1500 c.c. of oxygen per minute. In terms of pH, these reactions indicate that DeMar is able to do hard work with the maintenance in his blood of a normal resting reaction, while in the case C. V. C., pH changes develop while he does a grade of work considered gentle exercise for DeMar. As the work is increased, so great is the increase of lactic acid and consequent lowering of pH that rapid fatigue brings the exercise to an end, with the subject in a state approaching exhaustion.

It is clear that the amount of lactic acid in the blood associated with exercise is a measure of physical fitness in the four subjects studied. The relation found parallels the pulse rates observed. In view of the data obtained upon the blood, we came to the conclusion, first suggested by Hill and Lupton[14], that the muscle cells of a subject long accustomed to a state of physical training increase their powers of oxidation to such an extent as to enable them to burn fuel completely, even though the demands upon them may exceed ten or twelve times the rate of combustion characterizing the resting state. Such an adaptation is, of course, subsequent upon a sufficient supply of oxygen brought by the blood. Its importance is seen in the normal internal environment of all the tissues. Oxidation products do not reach the circulating blood in appreciable amounts.

Since all of the mechanisms of the body are so closely interdependent, it is not possible to study a single system independently of the others. The ability of muscle cells to meet increased demands set up by exercise is coincident with, or indeed a part of, the machinery required to maintain an available oxygen supply. Starting with the lungs, exercise apparently increases the vital capacity of the lungs, resulting in a greater pulmonary diffusion area. The larger stroke volume of the heart, together with the slow pulse rate, insure competent circulation of blood. The next consideration is that of the manner in which oxygen is given up by the blood upon demand by the tissues. At rest, about 20% of the available oxygen is taken out of the blood in one circulation through the body. As work increases, oxygen utilization increases until, in a trained subject, the level of oxygen in the mixed venous blood reaches a point below which it does not fall. In DeMar in this form of exercise this level is at about 50% saturation. In D. B. D. and A. V. B. it is about 45%. In C. V. C. no such level is reached. More and more oxygen is taken from his blood until the saturation with oxygen falls to 33%, during the hardest work he can do. These data are in line with the changes found with reference to pH. They are important since they very strongly suggest the minimum working oxygen pressure in the body. It is possible to express data giving the percentage saturation of blood with oxygen in terms of pressure in millimeters of mercury. When this has been done, allowances having been made for pH changes, it turns out that all four subjects maintain an oxygen pressure in the mixed venous blood of approximately 25 mm. In DeMar this is accompanied by the same mechanisms governing oxygen pressure at rest, but in non-athletic subjects it is not yet possible to estimate the total surtax placed upon the organism as a whole to maintain this apparently critical pressure of oxygen.

That exercise increases the capacity of the lungs may be seen in a comparison of the vital capacities of the two subjects DeMar and C. V. C., subjects of about the same stature. DeMar's

vital capacity, at 5,500 c.c., is about 45% greater than that of C. V. C. at 3,800 c.c. This implies, as a least estimate, an increase in diffusion area of 45%, which is no mean advantage for the athlete when the work done may require breathing of air at the rate of 60 to 100 or more liters per minute. Another factor not yet thoroughly studied is the permeability of the pulmonary membrane to gases, presumably a congenital difference in individual subjects. It is possible that DeMar's lungs have an unusually high diffusion coefficient which contributes materially to his athletic superiority. It may be pertinent here to note the answer to the question often asked: Is DeMar's ability as an athlete all due to training or is it in part bound up with hereditary characteristics? Both factors are responsible, natural adaptations having been developed and reinforced by long years of training.

With reference to the problem of the regulation of breathing, our data throw no light upon the subject of a single governor, such as pH of the blood. The study as a whole indicates that the machine has such an interlocking directorate, chemical, physical, and nervous, that breathing is a result of a composite integration of numerous regulatory mechanisms.

As a result of the changes observed in the respiratory quotient from rest to work we cannot avoid the conclusion that carbohydrate in the form of glycogen, or some substance closely allied to it, is the sole source of the fuel required for physical work. The levels of work reached by the different subjects at which the R. Q. approached unity fell clearly in the order of their different physical capacities. This suggests that carbohydrate alone is available for combustion during hard work in the untrained subject, and that in the trained subject, with cells accustomed to a metabolic demand many times that of rest, transformation processes tend to keep pace with the utilization of glycogen, maintaining its supply for long periods, but registering their activities in a somewhat lower R. Q. Our evidence furthermore suggests that the presence of food in the gastro-intestinal tract has no great influence on the R. Q. during hard work. The questions here raised are too involved for more than mere reference to them in this paper.

The study of our four subjects indicates that physical training increases the lung capacity, induces a slow pulse rate, increases the stroke volume of the heart, reduces systemic blood pressure during work, and apparently greatly increases the oxidation capacity of the muscle cells. The working state in a trained subject is characterized by an internal environment approaching the normal resting state with reference to the reaction of the blood and tissues. All of the above adjustments enable an athlete to extend his efforts for a longer period of time while doing severe work than is possible for the untrained subject.

From a clinical point of view it is now feasible to obtain quantitative data with reference to the physical reserve of various types of patients. There are many patients who have, or think they have, cardiac disease, whose lives are handicapped because of uncertainty in the event of exercise. It is possible to make certain quantitative observations of a helpful nature in this type of problem. Changes occurring during convalescence can be followed until a normal state is reached. The ability of a given patient to take exercise can be measured. The results of a system of graduated exercises in a given case can be tabulated and used by the patient as a score card of progress.

In general, what may be said concerning exercise as such? The tonic effect of exercise in the open air is well known, but body changes to which this is due have been studied on a broad scale only within recent years. Several years ago Dreyer[15], of Oxford University, published a study made in two different animals of the same species illustrating the effect of muscular activity. He studied the wild hare and the wild rabbit, the former leading a life of great activity, the latter a sedentary animal, confining its life to short range excursions from its burrow. The hare was found to have double the blood volume, 30% more hemoglobin, and three times more heart muscle than the rabbit, the animals being of the same weight. The pulse rate of the hare was one-third that of the rabbit and the respiratory rate less than half as rapid. All of the meat of the hare is dark, that of the rabbit is light. Broun[9] found that dogs, caged one to six months, when exercised on a treadmill, showed striking evidence of blood destruction as evidenced by diminution in red count and hemoglobin followed later by a characteristic increase in reticulated red cells as the blood was being made up during rest. Post-mortem evidence suggested an actual contraction of red marrow in these animals as compared with that found in active dogs. Hastings[16] found hemolysis in vivo in untrained dogs after severe exercise.

Exercise, or the want of it, is responsible for many obvious adaptations, obvious once they are appreciated, but space forbids carrying the discussion much further. Many of the effects observed in animals can without doubt be transferred to man. Many human beings are leading "caged lives", with physical reserve reduced, and often with an associated reduction in the sense of well-being. Exercise for exercise's sake, however, is not to be recommended in a hap-hazard fashion. An hour of exercise added to the schedule of an already fatigued business man might well be disastrous for him. Time devoted to exercise should be taken preferably on a reduced schedule of work associated with freedom from worry and nervous tension. Strenu-

ous exercise for a man at 50 should be avoided unless it has been systematically carried on through many preceding years. Occasional games of tennis or squash for men in middle life or past, whose lives are otherwise quite sedentary, are apt to produce more damage than good. Exercise planned for the individual, regularly indulged in, over a life time should yield many dividends of health. Sedentary workers, in our opinion, will be better off in the long run by avoiding occasional particiipation in strenuous games or other forms of severe exercise.

The author is indebted to Dr. E. L. Persons for the following excerpt from the Memoirs of Benjamin Franklin, a letter written to his son, August 19, 1772:—

"In yours of May 14, you acquaint me with your indisposition, which gave me great concern. The resolution you have taken, to use more exercise, is extremely proper; and I hope you will steadily perform it. It is of the greatest importance to prevent diseases, since the cure of them by physic is so very precarious. In considering the different kinds of exercise, I have thought that the quantum of each is to be judged of, not by time or by distance, but by the degree of warmth it produces in the body; thus, when I observe if I am cold when I get into a carriage in a morning, I may ride all day without being warmed by it; that if on horseback my feet are cold, I may ride some hours before they become warm; but if I am ever so cold on foot, I cannot walk an hour briskly, without glowing from head to foot by the quickened circulation: I have been ready to say (using round numbers, without regard to exactness, but merely to make a great difference), that there is more exercise in one mile's riding on horseback than in five in a coach; and more in one mile's walking on foot than in five on horseback; to which I may add, that there is more in walking one mile up and down stairs, than in five on a level floor.

"The two latter exercises may be had within doors, when the weather discourages going abroad; and the last may be had when one is pinched for time, as containing a great quantity of exercise in a handful of minutes. The dumbbell is another exercise of the latter compendious kind; by the use of it I have in forty swings quickened my pulse from sixty to one hundred beats in a minute, counted by a second watch; and I suppose the warmth generally increases with quickness of pulse."

Readers may well ponder anew the following aphorism of Celsus: "Laziness slackens and dulls the body, but labor strengthens and makes it firm. The former hastens old age, the latter prolongs youth."

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MEDICAL INSPECTION OF ARRIVING ALIENS

Due to careful attention to matters of communicable diseases among immigrants no quarantinable diseases were introduced into the United States in 1928 according to reports of the Surgeon General of the United States Public Health Service.

Cases of smallpox, leprosy and typhus fever were recognized and detained until beyond the communicable periods. This satisfactory condition is due both to the system of medical inspection maintained at foreign ports and the rigid care exercised at our quarantine stations.

The following figures reported by the Public Health Service demonstrate the amount of work done:

At domestic ports during the past fiscal year 18,667 vessels, 887,912 passengers, and 1,085,385 seamen were inspected on arrival by quarantine officers; at insular ports 2,964 vessels, 158,407 passengers and 223,296 seamen were inspected; and at foreign ports 3,460 vessels, 314,285 passengers, and 118,356 seamen were inspected prior to embarking for the United States.

SANITARY MEASURES

Of the passengers who embarked at European ports, 56,320 were vaccinated and 66,509 were deloused under the supervision of medical officers of the service. Clothing and baggage of these passengers amounting to 66,324 pieces were disinfected.

A total of 5,637 vessels were fumigated either because of the occurrence of disease abroad or for the destruction of rodents. Of the rodents recovered following fumigation, 18,821 were examined for plague infection.

During the year modifications were made in the quarantine practice which relieved from quarantine inspection vessels engaged exclusively in trade between ports in the United States and ports in our possessions and dependencies, unless quarantinable diseases should be prevalent at the port of departure.

More intensive work has been done on the Canadian and Texan borders.

No small part of the service consists in the examinations covering mental and physical defects for 9.7 per cent. of 17,227 applications for immigration visas were found to have mental or physical disabilities.

NEW ENGLAND MEDICAL COUNCIL

Harvard Club, Boston, January 14, 1929

MEETING called to order by Dr. Stone at 11.20.

Report read by Dr. Birnie on Reciprocity in the matter of registration.

Examinations by State Medical Registration Boards and Reciprocity

BY JOHN M. BIRNIE, M.D.

THE subject assigned to this Committee is:—"Examinations by State Medical Registration Boards and Reciprocity." I wish to say at the outset that I alone am responsible for this report as it has not been possible for the entire committee to collaborate. All of the members of the committee have worked on the general proposition and have furnished necessary data but they have not had an opportunity to add to or subtract from this report or to criticise or commend it.

In the first place we will not consider at any length the first portion of our subject namely "Examinations by State Medical Boards." This is a matter which has been very fully covered by the "Federation of State Medical Boards of the United States." The general type of examination is reasonably well established but will always be subject to variations due to local conditions and to state legislation. The subject of Reciprocity particularly as it applies to the New England States may well be discussed by us but we should remember that we already have an association of New England Registration Boards which has often considered this matter. I do not believe that any one of us really desires reciprocity, in the sense in which this term is usually employed. In the usual sense it means an equal exchange and under existing laws it is not always possible of accomplishment. What we really want is that each state may after careful investigation of a given physician register him by endorsement. Doctor W. Scott Nay sums up the matter extremely well in a letter to Doctor E. A. Hyatt which I will quote in part:—"The reciprocity feature in medical licensure is now in the discard as being quite ancient and unsatisfactory. At the meeting of Federation of State Medical Boards in Chicago in February, 1927, decisive action was taken in favor of endorsement vs reciprocity which seems most logical and equitable. For some time past our Board (Vermont) has endorsed the licenses of reputable men even from states which do not reciprocate when proper and reliable information has been given us respecting the applicant who desires our certificate." Doctor Luce strikes a true note when he says "The right of each State Board to reject any candidate, no matter what his qualifications, should be recognized as a principle."

Doctor Leighton of the Maine Board in a letter to Doctor Bryant says "Massachusetts is out of the question as things now stand. Maine, for one, will not agree to accept reciprocity with Massachusetts, because of the fact that the Board of that State accepts and allows applicants, graduates of low grade Class C Medical Schools to come before them for examination and licensure. Maine since 1915 has refused to recognize Class C Medical Schools and we have no other alternative. Massachusetts examines and recognizes osteopaths and Maine does not. We cannot enter into any reciprocal agreement with a State which licenses osteopaths as physicians and surgeons. The reason is evident and obvious. I therefore speak with authority when I say that you may count Maine out of the proposition, with the exception that we would assuredly agree to enter into reciprocity with Rhode Island and Connecticut. Maine already has reciprocity with New Hampshire and Vermont." Doctor Leighton is absolutely right in his contentions concerning reciprocity. No one should ask Maine to register a graduate of a Class C School or an osteopath but she might be asked to investigate each individual case as such and register as does Vermont. Reputable graduates of Class A schools who have been so unfortunate as to register in poor benighted culpable Massachusetts are not forever without the pale, for Vermont, Connecticut, New York, Michigan and many other states will register them by endorsement. Some of our New England States are prevented by law from registering physicians by endorsement. For instance Massachusetts requires that all candidates take a written examination and further requires that certain subjects be covered. Our Board feels that it can honestly fulfill these requirements without compelling registrants of other states to take the regular examinations and has voted "that you be informed that applicants from other New England States should be given special examinations, where the circumstances seem to justify such action, at the discretion of the Board."

It seems to me that the matter of endorsement can be covered with existing laws. Several states now have the power to endorse and those who have not might follow Massachusetts's example. As Mr. Hoover says, a working agreement is preferable to a hard and fast law.

Voted: To accept the report as read.

DISCUSSION

DR. BRYANT: I would suggest that a copy of this report be sent to each State Board of Regis-

tration and perhaps one to each State society.

DR. RICKER: The weakness in the law in some of the States, and in Vermont for one, is that the practice of medicine is clearly defined in the enabling acts and those acts carry the provision that they shall not apply to anybody else, but the practice of osteopathy and chiropractic is not defined, and they are licensed and they can broaden their scope just as widely as they choose.

DR. HYATT: I think our state law does not give the state boards of medical registration the right to endorse certificates as they are doing. They have taken this upon themselves irrespective of the law. It is hoped the next legislature will make it entirely legal. Our state board has nothing to do with Osteopaths or Chiropractors.

DR. RICHARDS (R. I.): This is a matter of great interest to me. I think it is the proper way out of the dilemma. It seems to me and to some of the members of the National Federation that something ought to be started along this line, and about eight or nine years ago I had a talk with the President of the Federation in Colorado and he suggested that a committee be appointed to take up the matter of individual endorsement, and at the next meeting a committee was appointed and I have been chairman of that committee ever since, until 1927. We worked for two or three years to get a form that met with the approval of the Federation. It was thrown out the first year because of some things that were not considered proper, but finally the certificate was endorsed, about five years ago, and this committee communicated with all the State Boards of Registration in the United States. What was called for in the certificate was the qualification of the individual. At that time Missouri and Illinois were in bad odor, but it seemed to me rather ridiculous and unfair that good men from those states could not go to another state and be registered. In corresponding with various states, we got about fourteen states to adopt that form of certificate, and it would seem that we could not get much further on account of the fact that some state laws prevented the full adoption, but even there, while the states like Pennsylvania could not adopt the endorsement certificate in lieu of an examination, the understanding has worked out pretty well. At the last meeting of the Federation in Chicago, last February, the form that we have presented, and that has been worked for year after year, and the most able men in the Federation, like Pinkham of California, have been on that committee, was unanimously adopted and that is now being used, I must say not as extensively as we would like, but it is being used in thirteen states and the District of Columbia.

Rhode Island was the first to vote to use it. Almost every State Board has been pleased with the theory but they say they simply can't use it. Perhaps they can't. But I do think that in the states that make the highest requirements—there are about ten such states, possibly eleven, that require graduation from Class A schools and a year's internship after graduation, and personal investigation of the applicant—that reciprocal relations might well be established. If they are obliged to make an examination under the law, have the examination similar to what we give those men who have taken the National Board—a very much abbreviated examination. I would go further and suggest that such courtesy be extended to the states that make the same requirements except the internship year so far as it affects the candidates who have served the year's internship. I have in mind such states as Maine. I think such candidates should be recognized. I wish something could be done to further the use of the individual endorsement certificate because I think it is good, and if a man has worked on a thing of that sort seven or eight years he has a personal interest in its success. We have been in communication with Dr. Bowers. He said he was interested in the individual endorsement plan but the law of Massachusetts would not permit its use. Vermont has adopted it.

DR. COBB: I would like to ask if you have a list of the 12 or 14 states which require one year of internship before the applicant can be examined by the Registration Board. I would like very much to get such a list.

DR. RICHARDS: I haven't it with me, but I think it is about that number.

DR. COBB: The last report of the Committee on Medical Education that I received stated that there were, I think, 12 states whose licensing boards would refuse to examine any medical man unless he had had one year of internship, but the names of the states were not mentioned. I think it would be of interest if we could get and put into the report of the Council the states which make such a requirement.

DR. RICHARDS: I would suggest if that information is received and published that we make it clear whether that internship is to be entirely after graduation. In Rhode Island, we make such a requirement; often a portion of that year has been put in before graduation and we do not accept that as service.

DR. MACLEOD: I think it would be a very good idea if the report could be transmitted to the state societies as well as the Boards. It is rather difficult to talk to them on the question of individual endorsement instead of reciprocity. If it could be shown to them that this Council really recommended individual endorsement it would advance the cause a little bit further. I move that this report be sent both to the societies and to the boards with the approval of this Council of the principle of individual endorsement.

DR. STONE: You mean of the New England States?

DR. MACLEOD: It seems to me that is what we had better start with. The Federation is

taking up the matter in a national way, and I think if we take it up as New England it would be a step forward.

DR. WILKINS: I would like an explanation of the "individual endorsement", which I don't understand.

DR. BIRNIE: For instance, nobody will endorse a Massachusetts license because we have to examine. Massachusetts must examine any man who has an M.D. from a regularly chartered medical school, therefore we have to examine a Class C school man. Also we do not have the one year internship. Vermont requires one year internship and Class A. If I desire to practice in Vermont (I am registered in Massachusetts) they will send the forms and letters and I get the endorsement of the Massachusetts Board and possibly the Masachusetts Medical Society and several men and with my various degrees and credentials I send them to Vermont. They investigate me personally. It is not a question of whether I come from Massachusetts. If I can satisfy them, they issue me a license by simply endorsing my certificate.

DR. RICHARDS: I will send you copies of the the individual endorsement certificate we are using in Rhode Island. It requires this: Suppose a man wishes to move into Rhode Island. In the first place we check up every statement on his application, from the college from which he was graduated. If he graduated from some foreign college or school, we investigate through the Consuls of that country. His identity is proven by photograph. Then next his standing in the State Medical Society, signed by the Secretary, moral character, his hospital internship, if any, his line of practice, freedom from violation of any state or federal law.

STATE BOARD OF HEALTH OF RHODE ISLAND

APPLICATION FOR CERTIFICATE TO PRACTICE MEDICINE THROUGH ENDORSEMENT

To the State Board of Health of the State of Rhode Island:

I hereby make application for a certificate to practice medicine and surgery in the State of .....and submit the following statement concerning my age, moral character, preliminary and medical education and practice.

1. Name in full .....
2. Address .....
3. Place and date of birth .....
4. I have never been charged with violation of any Federal, State or Local Statute except at follows.....
5. I have practiced medicine and surgery by virtue of a permanent license or certificate issued by a duly constituted State Board of Medical Examiners.....years, as follows:

From ..... To ..... At .....
From ..... To ..... At .....

Answer following questions "Yes" or "No."

1. Is it your purpose to abandon practice at your present location and to become a permanent resident in the State of.....Answer.....
2. Are you now, or have you ever been, an itinerant or advertising doctor?.....
3. Are you now, or have you ever been, directly or indirectly associated with an advertising doctor or medical office?.....
4. Have you ever been denied a certificate by, or the privilege of taking an examination before any State Medical Examining Board?.....
5. Has any State Medical Examining Board revoked or suspended a certificate issued to you?.....

PRELIMINARY AND PRE-MEDICAL EDUCATION

Give name and location of institutions attended, beginning with high school, with concise statement of period of study, giving date of diplomas or certificates received .....

MEDICAL EDUCATION

I have spent.....years in the study of medicine in the institutions named below:

Day, Month, Year	Day, Month, Year	Name of School	Location
From	to	.....	.....
From	to	.....	.....
From	to	.....	.....
From	to	.....	.....

I received the degree of.....from the .....College, located at .....on the .....day of .....

I am the person named in the diploma submitted and am the lawful possessor of same. The photograph submitted herewith is a true likeness of myself and was taken within sixty days prior to the date of this application.

(An extra, unmounted, copy of photograph is required)

Dated ..... Signed .....
(Name in full)

County of ..... State of ....., ss.
In ..... in said county on this .....day of .....A.D. 19..... personally appeared before me .....
who, being duly sworn, deposes and says that he has read carefully and truthfully answered the above questions.

.....Notary Public.

My commission expires .....19.....

LOCAL
RECOMMENDATION OF SECRETARY OF COUNTY MEDICAL SOCIETY
STATE

I ..... Secretary
of the ..... Medical Society
certify that .....
(Full name of applicant)
is personally known to me, and that he is an ethical practitioner and is of good moral and professional character.

I further certify that the said Dr. .....
is engaged in the reputable practice of medicine in the State of .....
and, so far as I am informed, he has not been an itinerant or advertising doctor. I have carefully examined all the statements made by the applicant and believe them to be true in every respect.

I also state that the above photograph is a recent one and the likeness of the said Dr. .....

{ Seal of } NOTE:—If Society has no seal the signature must be acknowledged before a notary
{ Society } public.

State of .....
County of .....

In ..... on the..... day of .....
A.D., 19..... before me personally appeared .....
to me known and known by me to be the party executing the foregoing instrument, and he acknowledged said instrument, by him executed, to be his free act and deed.

.....
Notary Public.

CERTIFICATE OF MEDICAL EDUCATION

It is here certified that .....
of .....
Matriculated in .....at .....
Date ..... attended .....courses of lectures.....
of ..... months each, and received a diploma from .....
.....
conferring the degree of Doctor of Medicine (date) .....
..... M.D.

(Seal) (President, Secretary or Dean)

Date .....

CERTIFICATE OF SECRETARY OF STATE BOARD ISSUING ORIGINAL LICENSE

I, ...Secretary of the .....
State Board of Medical Examiners, certify that .....
was granted certificate No.....to practice medicine in the State of .....
on the .....day of .....based on .....
(Written examination or diploma)
and that said certificate has never been revoked.

NOTE:—If by written examination the secretary should further certify:

I further certify that the aforesaid .....
in his written examination before this Board, obtained a general average of .....
per cent. in the following branches:

Subject	Per Cent.	Subject	Per Cent.
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

Acting on behalf of the ..... State Board of Medical Examiners, I hereby certify to the reputability of Dr. .....
based on the records, recommend him to the .....
State Board of Medical Registration as a fit and proper person to receive a certificate.
(Seal of State Board)

.....
Secretary.

Place .....Date .....

Space for photograph on reverse.

That information is not given to the candidate at all. It is sent over the signature of the Secretary of the Board of Registration to the Secretary of the Board in the State in which this man wishes to practice.

DR. PARKER: Is this endorsement slip an endorsement slip from the National Federation or one made for your individual needs?

DR. RICHARDS: It is the one adopted by the Federation last year and the one we have used for several years.

DR. PARKER: Would it be wise for us to make any recommendation as to a particular slip and have it go out as the recommendation of this Council?

DR. MACLEOD: I thought it would be better to endorse the principle only.

DR. ROWLEY: I think endorsement of the principle is all right. The Board in Connecticut is for determining the qualifications of applicants. We do not license the applicant. Those found qualified are recommended for licenses to the State Department of Health; and as I recall the blank it didn't take into account that side and it didn't seem to work smoothly for us. The principle I think is sound but we never have adopted the blank.

DR. BIRNIE: In New York State they will endorse if a man has been practicing in his original state ten years. I think it might be better to endorse the principle and not the actual form.

Voted: That the report presented by Dr. Birnie be sent to each State Society and State Board of Registration of the New England States and that this Council endorse the principle of individual endorsement.

Dr. J. B. Howland, Superintendent of the Peter Bent Brigham Hospital was introduced by President Stone. Dr. Howland spoke as follows:

DR. HOWLAND: I am here, gentlemen, at the request of your Secretary, Dr. Bowers, to talk to you on the subject of nursing. I have written no paper, but am to be allowed to speak to you on some phases of this many-sided and interesting present day problem.

I suppose every physician who has been a hospital superintendent for a number of years must be familiar with at least some phases of the nursing problem. For several years, I served on the Board of Registration of Nurses with Dr. Bowers, and since then, I have been thrown further into the problems of nursing as a member of a national board called the "Committee for Grading Training Schools", representing thereon the American Hospital Association.

I haven't come to you with a solution of the nursing problems, nor can I discuss the whole problem in the time allotted to me. It is a subject which has interested me very much and the more I have gone into it, the more I have realized the many difficulties and perplexities in its solution. The first attempt to make a serious study of nursing, so far as I know, resulted in the so-called Rockefeller Committee Report in 1919. At that time, this committee was headed by Dr. Winslow of Yale and some 23 hospital training schools were studied. Probably some good came from that report, but it was generally realized that a much broader study would be required to get at the bottom of the many questions involved. The interested national organizations met and decided to go further into the subject. The present committee numbers representatives of the National League of Nursing Education, the American Nurses Association, the National Organization for Public Health Nursing, the American Medical Association, the American Public Health Association, the American College of Surgeons, and the American Hospital Association. In order that as many points of view be represented, in addition to the associations above mentioned, Mrs. Chester P. Bolton of Cleveland, a Trustee of Lakeside Hospital, was appointed.

While it was felt that the Catholic nursing schools were well represented by the members from the National Nursing organizations, to satisfy some critics, Sister Domitilla of St. Mary's Hospital, Rochester, Minn., was asked to join the Committee.

That the general field of education might aid us the following gentlemen were induced to serve:—

Dr. Henry Suzzallo, President of Washington University (now a Trustee of the Carnegie Foundation for the Advancement of Teaching).

Dr. Samuel P. Capen, Chancellor of the University of Buffalo.

Dr. Edward A. Fitzpatrick, Dean, Graduate School, Marquette University, Milwaukee, Wis.

Dr. W. W. Charters, Professor of Education, University of Chicago.

About this time, the American Medical Association had appointed a committee to study private duty nursing, and its Chairman, Dr. Nathan B. Van Etten of New York City, was asked to join us.

I have taken your time to go into the composition of the Committee so that you may understand that the subject is to be studied in a broad way.

It was decided that an intensive study of the nursing situation in ten representative states be made. Those selected were:—Washington, New York, California, Kansas, Louisiana, Pennsylvania, Illinois, Massachusetts, Georgia and Wyoming.

Questionnaires were sent to all registered nurses in these states. The registries of nurses in those states were also communicated with and the committee made an intensive study of what was going on in the nursing field for one week in March, 1927. All the doctors in those states who were members of the American Medical Association were written to and asked to tell of the need of nurses at that time, and they were also given another questionnaire and asked to give it to one patient who had recently had a nurse. At an early meeting of the Committee, a Resolution

was passed which I think will interest you.

"Resolved. That it be the program of the Committee on the Grading of Nursing Schools (a) to conduct studies of the fundamental facts and factors determining an efficient nursing education, and (b) to formulate and apply tentative standards for the grading and classification of nursing schools, both lines of work to proceed together. The studies of fundamental facts and figures shall cover three distinct fields of inquiry:—

1st. The need and supply of nurses and other nursing functionaries.

2nd. The occupational analysis of the nursing service as to knowledge, skill, traits, etc., required and

3rd. The current status of existing facilities for the training of members of the nursing profession."

If the schools of nursing are to be graded wisely, it will be necessary to study the actual needs and demands of nursing service; what such service requires educationally and how such educational requirements are best to be met. It is considered then that we have taken on a five year job. We appointed a director of the study, Dr. May Ayres Burgess, Ph.D. She has given a number of years to various studies in some way not unlike this one, and is well qualified to direct the study and supervise the statistical work. Her husband is a noted statistician, as is her brother, and she has drawn upon their knowledge and advice in compiling many tables. The growth of nursing since 1880 is interesting. At that time, there were 100 medical schools and 15 schools of nursing; in 1926, the number of medical schools had dropped to 79 and the number of training schools had increased to 2155. In 1900, per 100,000 population, there were 16 nurses and 173 doctors. In 1920, for this 100,000 there were 137 doctors and 141 nurses. Dr. Burgess has compiled tables of what we may expect in the future. At the present time there are 20,000 new nurses entering the profession yearly. There are now 200,000 graduate nurses in practice, or 15 nurses for every 10 doctors. It is considered that there are 118 millions of people in the United States, so that one out of every 590 people is an active nurse. Dr. Burgess has carried her estimates ahead for the next seventeen years, and at the end of that time if we go on as we are we shall be graduating 38,000 nurses yearly and the number of active nurses at that time will be 400,000. There will then be 29 nurses for every 10 doctors. There will be, according to our growth tables, 142,000,000 people in the United States and one of each 365 will be an active nurse. We have heard a great deal about the shortage of nurses and yet it would seem from the facts gathered that there isn't an actual shortage. There may be some difficulties of distribution.

The first part of the study of this Committee of fact finding has been completed and has been published in a book entitled "Nurses, Patients and Pocketbooks", a report of the study of economics conducted by the Committee on Grading of Nursing Schools. I think you would all be interested in owning a copy and at least reading the summaries of the chapters. It has covered the field pretty generally and it starts with Part 1, What has the Committee learned? How fast has nursing grown? How far is it growing? Is there unemployment now? What registries say. Are physicians satisfied? What the physicians say. Are the patients satisfied? What the patients say, etc.

I suppose we would all agree that most of the nursing schools we have today are in existence because the hospitals themselves need the nurses and have found it is the easiest way and the cheapest way of securing good nursing for their patients. At the present time, it is estimated that there are some 2100 training schools, and besides that, 500 hospitals without such training schools. I do not need to tell you gentlemen the changes that have come about in the world as far as the employment of women goes. When our training schools were begun, there were few fields open to them. They could become teachers or nurses, but these were practically the only openings for educated women. Today, the number of women in the various professions, in the sciences and skilled occupations is almost unlimited. The doctors have very generally said that nurses have been over-educated. We thought at one time that there was a very great need for less educated nurses—the practical nurse. So far as our studies have gone in asking the doctors about their success with these practical nurses, they have not been satisfactory. Physicians demand good education and good training in their nurses, and if that is so, we must think seriously of having nursing schools on a more sound educational basis. Many of the hospitals are not well rounded out institutions, yet they conduct training schools; they want them simply to nurse their patients. The Boards of Registration of Nurses have had requirements which have made it necessary for these hospitals to have certain affiliations and requirements, but Dr. Bowers, I am sure, will agree with me that some of the claims made on paper by the superintendents of certain training schools as to what they give the pupils in the way of education are hardly substantiated by what they actually have given in practice. It would seem that the public demands intelligent nurses, and if we are to have them, we must have for our nursing schools the kind of women who look carefully into the field they would like to enter before actually beginning a course of study. If the methods of training do not seem sound and interesting, they will take up some other profession.

Of the distribution of nurses at the present time, a very large percentage are in private duty

nursing. They are not altogether happy in it. One of our studies was to show what these nurses are getting in the way of pay. In these ten states, geographically well selected, we found some interesting things. We wrote to these nurses and asked what they were getting and what they had been getting, and we have a table which shows what private duty nurses have been getting in the way of pay up to thirty years of practice. We find that the average yearly pay of a private duty nurse is $1311. That would surprise at least some people who appreciate the large expense of having nursing services, yet that average is rather a discouraging one, particularly when one notes that after thirty years of service, the nurse is getting no more for the year's work than when she first went into practice. That is unlike many of the occupations where, after many years experience, one may expect material advancement. In the public health field, it has been a little more encouraging. The average salary of the Public Health Nurse is $1720. In the institutional field, it has been a little higher because they have their living given them. For the purposes of this study, the living was counted at $500 a year, a figure that most institutions allow. The institutional nurses are the highest paid group; with this allowance of $500, their average is $2079. This study bears out that nurses have not done very well in the way of saving.

We asked them what their savings were. 27% of the private duty nurses had not saved $200. 29% had saved $1000. The savings in the other groups were a little better. Heretofore, the education of nurses previous to entering training has not been very high. We found that of the private duty nurses in active practice today, 14% have had 8th grade of school or less; 14% one year of high school; 17% two years of high school; 3% three years; 33% four years. I am told that it is an actual fact that today, it is very difficult to become a clerk in a good store without high school education and some are even giving these positions only to girls who have had some college experience. Many of these nurses who have been receiving these very large salaries as private duty nurses have others to look after. We find 47% had no other financial obligations; 41% had some other person partially dependent on them, and 12% had the full support of at least one individual to manage somehow. These are, I think, interesting figures. Some 54% of all graduates are doing private duty nursing, 19% in the public health field, and 23% in institutional work, leaving 4% in various other lines of work. Those are some of the problems we have considered. The next problem for the Committee to consider, I think, is the analysis of the job of the nurse in various fields.

Before we attempt to grade training schools, we want to know just what is expected of the various types of nurses. It is intended to start very shortly with an intensive study of the work in Western Reserve University, that is, Lakeside Hospital, and we shall learn something from that, and from there go on to still other studies. This book, "Nurses, Patients and Pocketbooks" contains not only the facts found, but the opinions of doctors, nurses and patients. I could not possibly give an analysis of what we have done, and I will leave that particular subject with these few thoughts. Not long ago, I received a report from a committee of a state medical society reporting to its House of Delegates on the subject of nursing. I was asked if I would comment on their findings, and I thought perhaps some of their topics would be of interest for me to speak on briefly, as a discussion will carry us further into the problems of nursing. I have selected a few of their topics. One is, "They want a higher standing, a broader education, a fuller life, and then to do those menial things which the sick someway seem to require, they want helpers in their schools. This order of beings may be allowed to practice as 'trained attendants.' Outside of the hospital these trained attendants must confine themselves to caring for those with minor ailments only, while the big and glorious cases are to be handled by the R. N.s." They do want a higher standing, and as I have indicated, we are no longer in the position we were in the '80s, or even '90s, of offering only one or two occupations for women, but we, in the nursing world, are competing with 50 or 60 or possibly 100 attractive fields for women, and if we can't give them some of these things they want, they are certainly not going into nursing. The doctors don't want so-called trained attendants. An analysis of what the doctors require goes to show that while there is a place for trained attendants, they can't do the main job of nursing in a manner that will satisfy either the doctors or the patient.

This report goes on to say that training schools feature certain things, and they quote the following from a training school leaflet:—

"Nursing is one of the most useful and satisfying professions which any woman can enter. The most inspiring part of the work is the privilege of assisting in the wonderful results which are being accomplished by physicians and surgeons, and other leaders in the field of research and practical medicine. The nurse's work is an essential part of all these activities; and so she has a vital interest in every detail connected with them."

"As superintendent of a hospital or a school of nursing, as head nurse in hospital wards or operating rooms, as supervisor of dispensaries and clinics, there are always opportunities for rapid advancement."

"As a nurse instructor, in schools of nursing, and as an instructor in Red Cross courses in home care of the sick, the demand far exceeds the supply."

"As visiting, school, child-welfare, medical, social service and industrial nurse, there are unlimited opportunities."

They say there is no mention of caring for the patients. I take it that was too obvious to need mention. This has always been known since nursing began. Why not feature the newer things?

Another paragraph states, "It is no wonder that hospital superintendents are a little weary of being ordered to increase their burdens when many times they have to meet their already existing deficit by some form of begging." My answer to these superintendents would be, "How about giving up your training school and running your hospital with graduate nurses only? It is quite plain why it is not done in most hospitals, and that is because they believe the expense would be much greater."

Another comment of this committee is: "The pupils are younger and less considerate than formerly. This is shown in their noisiness, their mechanical performance of duties and their lessened humility when things are forgotten or mistakes made. The little sympathetic touches which endear attendants to recipients are far too seldom given by these newer youngsters whose attention is not focused on personal service."

Here again, our answer is that we are now actively competing for women who wish higher education, and we must take them as they leave high schools or not at all. At the Massachusetts General in the 90's all candidates for admission to the School of Nursing were required to be between 24 and 28 years of age. Where would we get our nurses today if we had such a requirement. We should have practically no candidates except a few who had failed elsewhere. We must take these young women of about eighteen. Women of eighteen years are not as responsible as those 24 years or older. We must recognize the fact and guard against the drawbacks by appointing a larger number of experienced supervisors to closely watch and guide the students in carrying on their very responsible tasks.

Dr. Bryant told me this morning that his hospital, the Eastern Maine General, is about or has already affiliated with the Maine State University and the student nurses have their first year in that Institution. His first comment was "That will make them a year older." He recognizes the importance of the very thing we are discussing.

Another comment of this state committee is, "The nurses' hours are as fixed as the phases of the moon." I haven't found nurses as inflexible as that, but, after all, nursing is a profession and it is a day in and day out job. As soon as they leave one patient, they take on another if fortunate enough to get one. This report further says, "if death approaches, the nurse is apt to suggest a relief rather than a day or two of longer service."

I have learned that the expected approach of death is often extended from a day to a week or more and the nurse is asked to stay on and on. It doesn't make the field of nursing attractive to think of 24 hour duty without time off; when she sees her sisters engaged in an occupation with reasonable hours of service. I haven't found the "inflexible" condition that this committee reports. There are many more comments and they make a series of recommendations.

In a general way, I think we all are coming to feel that there should be a shortened period of fundamental training where a good educational curriculum is followed, and then certain studies taken in post-graduate courses. Many doctors feel that the only way to make a good nurse is by the apprenticeship system and that it must be maintained. I think there is a great fear on the part of many doctors that all of the training schools will become university schools. I don't believe we need fear that. On the other hand, there are too few schools of this type. My experience has been that it is extremely difficult to find nurses for teaching the theoretical courses who are sufficiently well taught and trained to know how to impart their knowledge. Any superintendent of a training school will, I am sure, agree with this. We need many such teachers. The rank and file of the nurses are and will continue to be trained by the so-called apprenticeship system.

Our report continues, "To lessen the cost of nursing will be difficult. It can be helped some by the teaching of simple nursing methods in our schools,—the shortening of the present training courses and pruning of the curriculum of non-essentials, the more frequent use of hourly nursing would be of great help. It is cheaper to patronize a hospital than to have a nurse in the home." I don't think we can expect much from teaching simple nursing methods in our public schools. I can see no harm in it, and possibly some slight good. At the Peter Bent Brigham Hospital, we have experimented with "group nursing." We took a floor in a private ward, made up almost wholly of semi-private rooms used by people of small means. We told every doctor and every patient of the attempt on that floor to try to use group nursing. This would make it possible for one nurse to take care of three patients on eight hour shifts, so that a given patient having this group nursing would receive 24 hour duty at a cost per day the same as if she had a special nurse for 12 hours. It didn't become popular. We kept it up for eight months and at the end of that time, the hospital had not met expenses by several hundred dollars. Those nurses were on salary and their services were not being utilized. We did our utmost to popularize it and failed. Other hospitals report somewhat greater success. Hourly nursing is now available in Boston through the

nursing agencies, and the Director of the Community Health Association states she has done her utmost to popularize this service, and yet it is not generally well used. It seems to me to have a great field here, and a means for cheap and efficient service, but so far, the public has not been sufficiently educated to recognize it, or the doctors haven't been alert to think they could use it with their particular cases.

Another recommendation of the report we are discussing is, if the shorter courses turn out too many nurses, the hospitals should employ more graduates instead of lengthening the course of training. I think our studies show that the field is pretty near saturation at the present time, and what are we going to do with these 20,000, later becoming 38,000, graduating yearly? It seems to me that a recommendation will have to be made that fewer hospitals establish training schools and that many of the existing hospitals conduct their nursing service with graduates and especially hospitals that cannot give a good, fair, rounded-out education to the nurses. The first thought might be that the small schools should be abolished. The small schools, while they are most numerous, are not turning out the great bulk of nurses; and if you abolish all the small schools, we are still facing a very serious problem of soon having too many nurses. These are some of the few things that enter into the present problem of nursing.

Dr. Bowers explained Dr. Howland's experience, service and knowledge and expressed his appreciation of his kindness in coming to the meeting.

Dr. Richards: I noticed nothing special was said about the industrial nurses, and wondered if the Committee has anything special to report regarding them.

Dr. Howland: There is a part of "Nurses, Patients and Pocketbooks" devoted to Public Health Nurses, and any reference to Industrial Nursing will be found under that heading. I do not remember just what there is on this subject.

Dr. MacLeod: I would like to ask whether the nursing organizations of private nurses have been co-öperative.

Dr. Howland: Very.

Dr. MacLeod: I ask that because I have heard of one or two exceptions—where the nursing organizations have been acting more or less on the idea of the labor unions in laying down demands and not being very reasonable.

Dr. Howland: In Massachusetts, we have found them extremely anxious to know what is the matter and how to remedy it. It was estimated that this was an expensive study, and the nursing agencies have given freely. Outside of gifts from individuals and from some of the Foundations, the main support has come from the nurses themselves. The national Medical Societies have also contributed. We have found only the greatest co-öperation and desire to give us what we want in our work. They have answered the questionnaires much more promptly and fully than the physicians.

Question from the floor: Have you found that the private nurses are very discriminating in the type of cases they would and would not take?

Dr. Howland: We have a table here which tells exactly the percentage of nurses who have registered for cases, and those who have discriminated against certain types of cases, as follows:—

Contagion	27%
Obstetrics	18%
Mental	13%
Night	8%
24 hour	6%
Men	2%
Home	2%
All but one	2%
Registered for all types of cases	39%

Our analysis of this shows that those who have not registered for all types of cases have been very largely the nurses who have had no experience in them, whose training has been limited and they felt they could not do justice to these cases. A very large number have registered for all kinds of cases.

Question from the floor: Do they discriminate between hard and easy cases? That is to say, they don't care to take a case which is likely to be hard? Does the proposition of classification enter into it?

Dr. Howland: We haven't brought that fact out.

Dr. Blumer: You suggested in the early part of your address that if we are to meet the demands of these young women for better conditions it will have to be along educational types of training, and later you thought the apprenticeship type would continue for a long time nevertheless. I want to raise a question. We have in New Haven a school of the educational type and it is not possible to care for the patients with the students in such a school. We manage it by having a number of affiliated schools. Would not that become a problem if a large majority of the schools went onto an educational basis?

Dr. Howland: Yes. That is of course an experiment, and I cannot possibly see the success of it unless it is thoroughly well endowed and the hospitals are not expected to bear the brunt of financing this type of school. If we are to enlarge the so-called educational type of training school, it must be endowed just as colleges are endowed, and the public must be expected to understand and support it. Our medical schools are endowed, and, as it happens, the Rockefeller Foundation is backing this experiment at New Haven. Personally, I should like to see the Peter Bent Brigham Hospital training school put on such a basis. We have not made much progress in the matter, perhaps because it isn't easy to make clear to Trustees that the hospital would

be better off with the change. If it could be brought about, I would have a training school affiliated with a vocational college for women, such as Simmons College. If such a school were started, we could not expect the Peter Bent Brigham Hospital, founded for the care of the indigent sick of Suffolk County, to stand the extra expense of such a project. Such a school would have to be endowed and the course of training put wholly on an educational basis. This is not the case in most of our training schools. We have the job of getting patients nursed, and often, there is an unequal division between medical, surgical, and other patients. Where this is the case, it means that our students often have to care for more of one type of case than their education calls for.

In an endowed school such as I have described, the duties of a student would be limited by what she needs to know, and graduate floor duty nurses and helpers would care for the excess of one type of case, and the many non-nursing duties we now require of our students. There is a great demand for better educated nurses,—those who are capable of teaching others.

DR. RICKER: I would like to ask if there is a tendency among the superintendents of nursing schools in general to rather impress upon their girls the idea that they are a little too good for private nursing. It seems to me in two or three instances that I have noted the girls leave the training school, not with the idea of doing private nursing but of doing something better; that the influence of their superintendents has inclined them away from the idea of private nursing, to institutional, public health, etc. that they are really too good for what you might call the drudgery.

DR. HOWLAND: I haven't any knowledge that that is so. The Peter Bent Brigham Hospital is perhaps a fair example of the training school that requires full high school education, and when our nurses finish, if they desire to take up some particular field, and have the qualifications, we encourage them to do so, but the great number of them go into private duty nursing. I haven't any knowledge or experience that would show that the heads of training schools are discouraging nurses from doing private duty. They do know the difficulties of going into the average home. We know there is a great shortage of servants and that a great many of the nurses who do private duty seem to be expected to take on the house work as well. They don't like it. If it was generally felt that they had to do that, it would mean the diversion of these desirable young women to some other field open to women where they might expect to be more contented. The answer seems to be the ever increasing use of hospitals for sickness; getting the sick out of the home, which I think must in the future be done to an even greater extent. The duty of "specializing" in a hospital is very much pleasanter because there are in the hospital all the auxiliary services which leave the nurse free to do the nursing. Of course, there are certain attractions which draw the nurse into private duty nursing. She is free. She can live her own life. She doesn't live under hospital rules with regular hours of going and coming, and the restrictions on having visitors that are necessary in an institution. She can live a more normal life in private duty nursing and that attracts many of the graduates.

DR. HARRINGTON: I would like to ask if any statistics have been made as to how many nurses drop out of practice after five or ten years.

DR. HOWLAND: Yes, we have that very completely and definitely tabulated. We know just how many drop out because of getting married and how many marry and continue to do active nursing. You will find this and much more in "Nurses, Patients and Pocketbooks." You can get this book from the Committee on Grading of Nursing Schools, 370 Seventh Avenue, New York.

DR. BRYANT: We have had our difficulties in getting competent teachers and it has seemed to us that there were a number of subjects, including anatomy and physiology and psychology that could be better taught in the university. We have the President of the University of Maine on the training school committee. We have established an extension course in the hospital in which five or six subjects can be taught by professors of the University of Maine, and we are looking forward if it is a success to the possibility of putting in a six months' or one year's training in the university for the student nurses who intend to take up nursing, with the idea that it will shorten the amount of education along those lines in the training school and give more time to practical nursing and training school practice, teaching nothing but the care of the patient and the various things that come up in connection with it and make it a demonstration, an active, practical, clinical course in the care of the sick, and let the University, which is better able to teach those other branches, take care of that part.

DR. HOWLAND: That is not unlike what is taking place in the Children's Hospital and the Deaconess. They get part of their education at Simmons College. They have about six months at Simmons, and then go back to the hospital for their further training. We have an arrangement with Simmons which we call the five year course. It is interesting a number of young women. The first two years are spent at Simmons studying particularly the sciences which lead up to nursing. At the end of that time, if they have passed their requirements, they may come to the Brigham, Massachusetts General or the Children's Hospital, where they continue for two years of practical training. The candidates, upon entrance to Simmons, must be acceptable to the various hospitals, must meet physical requirements and generally be acceptable

and good prospects. At the end of the fourth year, they go back to Simmons College where they can take public health work. At the end of the fifth year they are given a Bachelor of Science degree from Simmons, a certificate in nursing from the hospital they have selected. At Yale University, at the end of their term of training, they are given a Bachelor of Nursing degree. Many of these girls go on to other post-graduate work specializing in whatever interests them, hospital training school, administration, teaching, etc., fulfilling a very useful place in life. One must think of all this in distinction from the early days of nursing. The standards of women and of people generally were much lower in matters of education than they are now. In practically every activity in which women are engaged today, high school graduation is required. We find that the women who have dropped out before completing high school generally have done so because of lack of ambition; they are not mentally alert. I think we are going to get much better nurses if we make a full high school course a requirement to entering training. The experience at the Peter Bent Brigham Hospital has shown it is a good thing. We also require a reasonable average grade in these schools. They must have been fair students, and we don't take the students who have taken easy courses. They must take a really good educational course in high school, giving some training in the sciences.

DR. RICKER: Which makes the better nurse, the high school graduate with four years' training or the equivalent of two years in high school with three years' training?

DR. HOWLAND: I believe the high school graduate will, as a rule, make the better nurse, for, as I have said before, generally speaking, it has been found that high school graduates are more ambitious than those who have dropped out before completion of the course. If a girl lacks ambition to complete her high school course, the chances are she is not going to be ambitious in her chosen field. There may be exceptional instances in which the high school course was not completed for a very good reason.

DR. STONE: Can you give us the approximate difference in cost of running a hospital on a training school basis and on the graduate nurse basis?

DR. HOWLAND: I can't. There are such figures, but I can't give them to you. It isn't as great as it would appear to be at first because when running training schools the nurses have to have a lot of hours off for classroom work; and also the graduate nurse we assume has more skill and greater ability.

I would like to close by saying to physicians who frequently take occasion to refer to the good old days when nurses were so self-sacrificing,—what is the use of such talk? We must meet conditions as we now find them, having in mind that training schools for nurses are competing for the best young women and that many other professions and occupations now attract women. So we must be prepared to take the high school graduate at eighteen years or thereabouts and adjust our teaching to the age of our candidates. Remember, if we don't take them when we can get them, we won't get them at all. A little less sentimental talk on the part of physicians about in "good old days" would be in order.

DR. COBB: There is one question in my mind. The graduate nurses seem to have the feeling when they go into a private home, or some of them do, that they are unwilling to prepare the food for the patients. They expect the family to have a domestic to prepare the patient's food and her food and she needs a good deal of waiting upon by somebody and I wonder if they get that opinion from the training schools.

DR. HOWLAND: I presume they must; but in my opinion, the best educated girls, with the best background, are the most sympathetic and ready to help in emergencies. The practical nurse was thought at one time to be the solution of that domestic difficulty in nursing care, but we have found in our study that the average pay of a graduate nurse is $6 and that of the domestic nurse is $5. The difference is not very great. The practical nurse for a while may perhaps from her training take on more duties, but she gradually drops this attitude and wants to pass for a trained nurse. Her education and training are generally too limited for her to do that successfully.

Voted: To invite Dr. Bartol, former President of the Massachusetts Medical Society to luncheon.

Adjourned.

Reassembled at 2:25 P. M.

DR. STONE: Do you wish to have any further discussion of the nursing subject; do you want to take any action or appoint any committee to deal with the nursing problem?

DR. BIRNIE: I noted a couple of things that interested me in the figures given by Dr. Howland. First, his analysis of the pay, and I wondered whether that amounted to a very great deal. I have seen some rather interesting statistics on medical men and also clergymen in the United States, but that really doesn't show the picture of the educated person. I wondered how the yearly pay of stenographers would average up with that of the nursing profession. To me these are more or less alike. The two average about the same in deciding whether a girl will take up nursing or secretarial work. I believe the stenographer gets no more money in the course of twelve months, and as for the family responsibilities I believe the stenographer would average ahead of the nurse in those dependent upon her. She also doesn't receive so much more money if you take into consideration the expense of food, for even the girl on 12-hour duty gets two meals a day. That is

a considerable item in the course of twelve months. Most of us are not quarreling with the amount of money the nurse gets or what her status should be. It all comes down to the question of education. The speaker thought the education should be along more general lines and the special things should come in the way of more advanced educational work. As to Dr. Parker's question. I have had some experience in Springfield with these girls who come into the registry and you would be quite surprised at the attitude; some will only nurse in a certain hospital; some only take certain types of cases; some will not go into private homes; some put down that they will not work for certain doctors. It makes quite a proposition. They are very "choosy" in Springfield. I think Springfield is quite well sold on the hourly nursing. The patients bring that up themselves. As to the age of entering nursing: 18 years old when they go into nursing or graduate from high school. The average girl at 18 is a graduate, unless she has been out of school and gone to work. In most of the requirements they say a high school education or its equivalent, and you may decide whether she has done work that is equivalent to completion of the high school course.

DR. STONE: Do you want to appoint any committee to shape up this nursing problem in any way?

DR. MACLEOD: Wouldn't it be better to wait until this national committee has made some definite recommendations?

DR. STONE: That will be three years later.

DR. PARKER: It seems to me that we ought, from the nature of this body, to make some recommendations eventually if we can in regard to this subject if it is important enough. It seems to me it is. I for one, although the talk we have heard was very interesting and very valuable, don't feel that the subject has been covered broadly enough yet in all its phases for us to make any definite conclusions, and if you men feel that it is important enough it seems to me it would be well to have some prepared papers at some later meeting taking up the different phases of the subject.

DR. WHEELER: I would like to see reported the nature of the instruction these nurses are getting; how many hours instruction and what subjects are taught, and the connection between their instruction in certain branches and their profession.

DR. LANMAN: One thing that impressed me in Dr. Howland's talk was the idea of having the nurses learn their medical work from instructors in the regular school. At the Children's Hospital I have taught surgery for eight or nine years. There our pupil nurses spend eight or nine months in learning anatomy, physiology, chemistry, bacteriology, etc., at Simmons College and the sum total is something like 300 hours; and they are allowed 15 hours in surgical lectures. The thing that impresses me very much is this: they get this theoretical knowledge early and by the time they get into the wards they don't know as much anatomy as a well trained Girl Scout of 14. There is no way apparently under our present system of correlating the theoretical work with the practical, and I think giving 300 hours to those subjects and expecting me to cover the field of surgical nursing in 15 hours is entirely out of proportion. If they could give me 15 hours in addition to the lectures to go to the wards and show them why you give an enema or why you give morphia after an operation I think we would make a great deal more progress. Also it came out very strongly in the course in First Aid that the nurses themselves were anxious to have such instruction. These courses are given just before they graduate, a very brief 6-hour course in First Aid, and to me it was perfectly astonishing how little they knew of the practical application of theoretical knowledge. The practical knowledge of anatomy strikes me as the greatest fault. For instance, in the control of hemorrhage for a cut finger, they will invariably try to put pressure on the axillary artery but sometimes get down as far as the brachial. Another question I used to ask was which side of the body the liver is on, and the answer would run about 51-49. I don't remember which way. I am a little bit in doubt whether these University extension courses, unless you can bring the work into close connection with the practical work in the wards, is not a waste of time. I think you have got to give a certain amount, but when you give 300 hours and they don't know which side the liver is on I don't think the anatomy knowledge has been brought home enough to make it worth while.

DR. BLUMER: Isn't it true that the 300 hours in Simmons College is equivalent to a whole year's college work; that in those six months they do a whole year's University work?

DR. STONE: They are entirely away from the wards during those six months. That six months is I know a hard grind.

DR. RICKER: If I understand teaching, you can't expect the average pupil to retain or remember only about so many facts per hour of instruction. In addition to that, you have got to have an interest evolved. You take these girls out of high school, many of whom have never seen sickness, and put them into strange environment and limit them to three months of technical instruction, and the first thing for them to learn in industry is what does it all mean. They don't know what it means. If they could be put into the wards and taught that the job is to take care of the sick, with proper supervision by a teacher as they go along, I think you would get a result that would not look half as good as a record of so many

hours of anatomy and so many hours of bacteriology, but you might have some brains in your nurses.

DR. LANMAN: After they have learned something about the routine care, if you could take them into the wards and show them an undrained appendix and another patient with peritonitis and tell them why they are doing certain things, then they will begin to think over these things and become a help to you. But most of them have learned that the third day you give an enema, the fifth you give oatmeal and the tenth day you take the stitches out, and that is about as far as you get. You have got to have the theoretical teaching, but you can cut down a little on that and then have teachers take them around in the wards, and they certainly become much more interested in that way.

DR. RICKER: We fellows are not altogether free from blame. A little explaining by us here and there would help out a whole lot.

DR. LUCE: Until quite recently, I have felt that in New Hampshire we hadn't any nursing problems. But since the book which was read here this morning has come out, we have a problem. Our nurses are filled with quotations from this book. They read it. They are disgruntled. They read these statistics, they memorize them and they quote them. It is pretty well known that you can prove anything you start out to prove with statistics. When I was an interne in the Maine General Hospital 35 years ago we had a training school and 90% of those pupils had been district school teachers. They were 25 or 30 years old. You can't get those now because there are no district school teachers to take up nursing. But now we have the little girl coming out of school, eighteen years old, and taking up subjects that have bothered all of us quite a little, receiving her instruction in these basic sciences from another nurse, and how can we expect her to know much more than which side the liver is on; and I don't know that it is very important that she should know. I would think she might be a pretty good nurse and not know. You have got to take the 18-year old girl now with what capacity she has and do the best you can. I think personally we are trying to give them too much. A lot of it isn't necessary for them to know. I think that with fairly good instruction from an older nurse who has had experience through the hospital, that they can be taught about all the anatomy and chemistry and biology that is necessary for the functioning of a nurse as we want her to function in the care of the sick.

DR. STONE: This discussion seems to make it perfectly clear that it might be wise to devote the next meeting to several papers on the different aspects of the nursing question.

DR. MACLEOD: I make this as a motion that we devote the next meeting to the discussion of the different phases of the nursing subject.

DR. RICKER: I would like to amend by adding that one of the speakers be a prominent representative of one of the training schools, preferably the Superintendent, so as to get that side of the problem.

DR. ROWLEY: Is this field being covered by any other organization or group in New England and are we duplicating anything that they are carrying on?

DR. BOWERS: None that I know of. There is only the National Committee, which is on its second year of a five year program.

DR. MACLEOD: I think we should have a speaker representing the practising physician. The attitude of the practising physician is quite different from that of the hospital executive.

A vote being taken, the motion was adopted.

A Report was read by Dr. Rowley from the Committee dealing with the program of the meeting held in Maine in June.

REPORT TO THE NEW ENGLAND MEDICAL COUNCIL*

January 14, 1929.

Mr. President and Members of the Council:

At the meeting of the New England Medical Council held at Belgrade, Maine, in June, 1928, it was voted that the subject matter of that meeting be referred to a committee of three and that they report at the next meeting.

The President appointed Drs. Rowley, Luce and Bryant members of that committee.

The topic under discussion was "Education of the Public", and this was considered under three subdivisions; namely, (a) with reference to the cults; (b) with reference to public health measures, and (c) with reference to medical legislation.

The subject of "Education of the Public" with reference to the cults was introduced with a splendidly prepared paper by Dr. O'Brien of Massachusetts, dealing briefly with the history and evolution of medicine as well as cultism, and referring to some recent work effectively carried on in his state in opposition to proposed legislation that was intended for the interest of the cults rather than for the interest of the whole people.

Several of our members discussed this paper, and there seemed to be a pretty general feeling that the members of the medical profession must in some way be made to more effectively assume the rôle of teachers of the public and should be ever careful not to malign the ignorant.

Dr. Ricker brought before the meeting in his clear and forceful style the subject of "Education of the Public" with reference to public health problems.

He laid emphasis upon the teachers, recruited from the medical profession, being well prepared to teach the public in those matters that have awakened public interest.

*Of the subject matter of the meeting held at Belgrade, Maine, in June, 1928.

In the discussion Dr. Blumer pointed out that many of us are unable to express ourselves on technical subjects in a way that can be fully understood by those who most need our message, and he mentioned movie films and the radio as important instruments in educational work.

With reference to medical legislation, it was pointed out that the hope for progress will be determined by our ability to assist the public to grasp our viewpoint and to understand our motives.

With so many divergent views as were expressed at our meeting, it has not been easy to determine a predominating sentiment, and while local factors will always have an influence in shaping our ideas and our plans, the topic under discussion presents a good many problems in the practical application of plans, and there is after all a more or less common aspect to this topic, and when each state can have the benefit of the ideas and experience of representatives from each of the other states in dealing with problems that are more or less common, we should be in a position to progress more satisfactorily and to carry on our work more effectively than we have heretofore.

With reference to the cults, their activities and their ambitions, it would appear to be accepted by us that there is need for self restraint and caution in our attitude and remarks lest we make them appear in the rôle of the oppressed.

One observes a little tendency to a leveling off process in the barriers that have existed between general medicine and cultism in general. This tendency is beginning to manifest itself in our attitude toward the osteopaths, and those who have served on composite boards having one or more osteopathic members appear to have survived that trying experience.

This policy of conciliation and equal representation may be prophetic of the future attitude of the medical profession in other states, but it certainly does not represent the present attitude of medicine in general. The operation of a composite board having cult representation is probably wiser and safer from a standpoint of public health than for the cults to have their own boards and own standards for qualification, but the composite board must find itself ever confronted with the demands that representation be given to newer cults as they appear in their midst.

The refusal to give such representation leads, as we all know, to the struggle to prevent the new cult from establishing another and independent board for its own interests.

Some four years ago Connecticut, fortunately, hit upon a plan that so far has been very satisfactory, and it has afforded the public a measure of protection from those who lack what is considered a minimum of basic education on the part of those who would hold themselves out as capable of treating the sick.

The basic science idea seems to be meeting with some acceptance in different parts of the country, and your Committee feels that perhaps this Council may want to carefully consider the basic science idea with a view to its endorsing and working for its adoption in the New England States.

Another idea that your Committee puts in the form of a question is whether it would be advisable, of value and feasible to recognize some central bureau for this Council where all literature, records and other useful information on this and other subjects, such as medical legislation, could be kept on file and available for use in any of the New England States.

Another question that your Committee presents to the Council is: Could there be a committee of co-öperation, made up from members of the legislative committees of the different New England states, for mutual assistance in legislative work?

For the educational work in public health each state, no doubt, has a plan which is similar to that in effect in other states, but it is of interest to know that in Maine the State Medical Association is in very close co-öperation with the Public Health Association, and at the present time the personnel of the officers of the two associations are, in a number of instances, identical, so that virtually all of the health activities undertaken by the Public Health Association are approved by the Maine Medical Association through those officers who happen to be serving on both committees.

In the discussions at our last meeting, reference was made to the subject of regular physical examination, and it was emphasized again, and it has been ever since this idea took hold of the people, that the average doctor is not well informed as to what it all means and his attitude may reflect a lack of sympathy with the plan because of his failure to understand.

It is pretty generally agreed that the so-called health examination ordinarily should be made by a person's own physician, who will be expected to know the mental as well as the physical characteristics of people seeking these examinations, and who will also know how much and in what form the report of his examination shall be made known to the one examined.

Your Committee has not found it an easy task to report on the proceedings of our last meeting, and we ask you to be charitable in your criticism of our effort, for we are free to acknowledge our lack of qualification for this work.

Respectfully submitted for the Committee:

THOMAS W. LUCE,
BERTRAM L. BRYANT,
ROBERT L. ROWLEY.

Voted: To accept the report.

DR. PARKER: It has occurred to me that in the matter of education, public health, and legis-

lation concerning the cults, we might go further than this report recommends. The appointment of a committee or a central bureau for New England, I think, is theoretically feasible, and also practically so if the machinery would not be too ponderous. This committee or bureau should not necessarily be made up from the legislative committees of the different states, as these change from year to year, and may not be composed of men who are experts in handling these questions. The appointment of this committee could possibly be made by this body if authorized by the state societies. The object would be to get a group of the best men in New England to handle this subject. This bureau would have in its archives those documents that have been used in previous contests with the legislatures, and also they would have in their files the names of men who are particularly qualified to speak on any and all subjects that might require attention. These men could be called upon by the different states if needed. This bureau would have material giving definite lines of attack, if you want to put it that way, and also data that could be put into the mouths of the local men for use before their own legislative bodies. This same bureau, or another if you wish, could have material on public health questions written by men who are qualified to write popular articles on any subject that this committee or central bureau might feel pertinent at the time. This material could be used in the newspapers, as features in Sunday papers, or in any other way that might seem wise.

DR. STONE: I would ask the attitude of the American Medical Association in regard to the basic science laws. Are they as favorable to it as formerly? Are they not inclining against it?

DR. BOWERS: I think that is right.

DR. ROWLEY: I think Wisconsin adopted that idea about the same time as the A. M. A. and since then several states—three or four—have adopted something similar and it is under consideration in some other states.

DR. RICKER: I wish the profession in general and New England in particular could have a uniform idea in regard to this legislation business as regards the cults. I have changed my mind three or four times in the last few years. In the first place, in regard to this legislation idea I don't think it is half as important as some of us have thought it was. I think we have attributed an undue weight to the matter of legislation itself. The cults seem to thrive in one state as well as another, whether "verboten," or "volsteaded" or what-not. I used to think they ought not to receive any recognition at all. I thought they ought to be wiped off the map. That is impossible, whatever you may think. The public seems to demand the right to treat their own skin and bones as they see fit and employ whom they choose to do so; so we might as well face that. When basic science first appeared it looked good. But here, in the first place, you admit the chiropractor and the osteopath to a full fledged license to practice his profession and you do that by means of a divided board. The effects are twofold. In the first place, the recognition of the fellow as a member of the profession of the healing art. You give him a standing right then and there by admitting him to this examination and recognizing him as a practitioner of the healing art. In the second place, by having this combination board it is a case of dog and tail and which wags which. I believe that the combined board, admitting any other group is a dangerous arrangement to adopt. What I do believe is wise legislation is for the medical profession to see to their own house, that it is kept clean, that the registrants are proper men and that disciplinary measures are administered a little more freely than they are; also that anyone else that wishes to practice anything—I don't care what—can go before the legislature and apply for a board to hear his specialty and define his practice. I have no objection to the chiropractor practising chiropractic; I have no objection to the osteopath practising osteopathy. If we can't compete against them on their own grounds, let them have the business. The fact is they haven't got anything that will last. Osteopathy had its run and chiropractic has its day. If the osteopaths were not engaging in dieteties and physio-therapy they would amount to but little today. Define the practice of each of these groups and let them be licensed—on a six weeks course if they want to. The lower the standard, the quicker they will meet disaster, but the essential thing is the definition of what each group is to practice.

DR. COBB: In our city we have two chiropractors and two osteopaths and a short time ago I had a little conversation with the last osteopath that was registered, and he remarked that he could practice anything he chose under his registration. He said, "I have taken the examination that the State of New Hampshire provides. The regular examining board has given me the same examination that they give the M.D.s; I am registered to practice the healing art and there is no restriction whatever in regard to my practice. I can practice obstetrics; I can practice surgery; I can do anything that I please that any M.D. can do under my license to practice the healing art." I didn't believe that was true and I wrote to the Secretary of the State Board, Dr. Duncan of Concord, and I asked him to give me the law and his understanding of the situation as regards the chiropractor and osteopath and what rights they have to practice medicine. He replied that under our New Hampshire law the osteopaths take exactly the same examination as the M.D.s and they are licensed to practice medicine; they have full rights, and they can practice anything they choose. Our osteopaths do not practice obstetries; they do not practice surgery except little minor office work, but the joke of it is they have the right to do what they don't want to do. I

don't believe it is right, but I don't know as we can change it.

DR. BIRNIE: It seems to me we are getting a litle bit excited over things that don't mean so very much. We are worried a bit because the osteopath and chiropractor can do about what they want to in New Hampshire. Most of the New England States do not require an internship from a medical man; nothing said about surgery. To be very personal, I did six cases of obstetrics in Medical School and have never delivered a woman since, but there is no reason why I can't do it under my license. A man graduates from Harvard and passes the State Board and there is nothing to prevent him doing anything he wants to do; and until we define medical practice and what a man is entitled to do I don't see how we can kick about the osteopath and chiropractor. If we try to stop this thing, they are going to pick on us. It seems to me the best safeguard is to require a fundamental medical education. If a man is educated, he is a pretty safe individual.

DR. BRYANT: I would like to straighten out a little tangle. At the time the Council met in Belgrade it was stated in this report that we voted to make a composite board of 50-50. That did go through the House of Delegates but by referendum it went back to the county societies and 100% voted against it. So at present we have prepared a basic science law to be introduced into the legislature. I think we should think over the possibilities of dignifying any cult and placing it on a level with the medical profession. It is a mistake. We have enough to do to keep our own house clean without bothering about the other fellow. If we get through the basic science law on top of a high school education requirement and make everybody who wishes to practice the healing art pass that board, why then it is no particular business of ours as to how a man treats his patients. This was taken up with the A. M. A. The Department of Legal Affairs condemned the composite board and suggested very strongly that we should go out for real legislation and for the basic science law. That was the last report from the A. M. A.

DR. WILKINS: Although the osteopaths are examined by the same board and have the same privileges when they have passed the board, during the first four years of the working of our board, no osteopath was passed by the board. Whether any have been passed in the subsequent four years I am not sure. One of the requirements is that they shall have had four years of education in the osteopathic school; no applicant can come before the board who has graduated from any school that has less than a four years' course. So I think the law as it stands in New Hampshire is fundamentally sound. They are required to have an education that is presumably equal to some of the medical schools; but as a matter of fact they have not proven themselves equal to passing the examination, so I think there have been almost no increases in the number of osteopaths in New Hampshire since the law was passed. There were osteopaths practising before the law was passed and they were allowed to carry on.

Voted: That the report of Dr. Rowley be reported officially to each Society.

Informal discussion of the proposed New England trip and schedules suggested by the Great Northern R. R.

Voted: That the schedule be submitted as the official New England trip.

UNFINISHED BUSINESS

DR. COBB: I believe that there are some very important questions that should be considered by the New England Medical Council. After my remarks about the osteopaths someone suggested that we ought to clean house ourselves and I entirely agree with that remark. I think the time has come when we as M.D.s should begin to clean house and look ahead. There is a question in regard to medical education that ought to be considered by the Council. In looking over the third report of the last committee on medical education everything seems to be provided for so far as recommendations are concerned up to graduation and receiving the M.D. degree. No action whatever has ever been taken or recommended concerning the preparation and training of the specialists. I believe the time has come as a matter of medical education when the question of the training of the specialists should be considered by the medical societies of our New England states and that some recommendation should proceed from this body on that subject.

We know that young men after practising a year or two, and some without much general practice, make up their minds to limit their practice to some specialty and they go to a private or semi-private post graduate medical school and take a brief course—perhaps six months—without any internship, without acting as assisting surgeon in their specialty or without having an opportunity to perform actual clinical work in any specialty, such as eye, ear, nose or genito-urinary surgery, and after such a short course of observation return home and announce that they limit their practice to their chosen specialty. They are specialists from choice. I believe that a different method of training for the practice of specialists should be put into operation, not to make any such course mandatory but simply elective on the part of the younger men who wish to limit their practice. I wonder if this Council wishes to take the matter up in the near future and discuss the possibilities of the medical schools or some school like Harvard establishing a course in any one of two or three specialties, which the M.D. can take to prepare himself for the practice of some specialty and receive a diploma on graduating from such a course. I believe the time is ripe and should come very soon when on account of that diploma and his experience he should be registered by

the State Board of Registration and be known as a registered specialist. The trained nurse today is not satisfied to be simply a trained nurse; she wants to be a registered nurse. If it is important for a trained nurse to be known as a registered nurse why isn't it important in the future for the specialist to be known as a registered specialist? I believe this body should interest itself in the future training of medical and especially surgical specialists. I have known young men in New Hampshire who have after six months post graduate work returned to their homes and commenced operating on eyes, ears and genito-urinary diseases and doing the kind of work which requires years of special training and experience. We have a good many specialists, honorable men and good men, who never have taken such a course but after a long experience in practice have limited their work to some specialty; but it is true that we have a good many so-called specialists not properly trained in their specialty and without proper skill. It seems to me in these days of advanced medical knowledge and medical skill and surgical skill the time has come when specialists should be known as graduate specialists or registered specialists, and that some medical schools like Harvard should establish such courses.

DR. STONE: Will you make that as a motion, that it be referred to the Executive Committee?

DR. COBB: I will make the motion that, after the question of nursing has been discussed and considered and passed upon, the next subject that we take up shall be the practical training of the medical and surgical specialist, and urge some medical college like Harvard University Medical School to establish such a course of training with a view to graduation and receiving a diploma so that the specialist can be known as graduate and registered specialist.

Motion seconded.

DR. BOWERS: I would like to suggest that you don't specify Harvard University, but any Class A school.

DR. COBB: I will accept that suggestion of Class A.

DR. BLUMER: I think the thing ought to be made very broad. There are different ways in which the desired result might be brought about. While Yale University does not give any formal post-graduate course, there are a group of young men who go through post-graduate experiences, beginning as internes and then getting to be an assistant resident and finally resident and they may be in a hospital for a number of years in one service. Of course even then they don't receive a degree but they are well trained men. You have the same thing in almost any teaching hospital where they have the house staff graded.

DR. COBB: Would it be possible to have such a school establish such a course and issue a diploma?

DR. BLUMER: It would of course be within the power of the University to do that. I have an impression that at Yale a man can now go through that course and work for a Ph.D. degree and get it in medicine or surgery at the end of two or three years.

A vote being taken upon the motion with the substitution of Class A school for Harvard University, it was so voted.

Voted: That the time and place of the next meeting be left to the Executive Committee.

An invitation was extended to meet at Bellows Falls in October.

DR. PARKER: At a meeting of the Executive Committee held here some time ago the subject of the NEW ENGLAND JOURNAL OF MEDICINE came up unofficially. Dr. Hyatt was present. And I want to say that this did not originate with Dr. Bowers or Dr. Stone, but the question came up as to whether it might not be a good thing to make this JOURNAL in reality, more a New England medical and surgical journal than it now is. Certain states have adopted the JOURNAL as their official organ and receive the JOURNAL once in four weeks when the transactions of their society are published. Other states still retain their own journals. Is it advisable for the New England States to become part owners in this JOURNAL? Could not the states come in on some basis, as Massachusetts now comes in, and bear their pro-rata expenses of publication and be represented on the editorial board and in fact have all the advantages that Massachusetts now holds? I don't know that it would be acceptable to Massachusetts; I don't know how much additional expense there would be to the states, but I think it would be about the same as now. The JOURNAL would be more nearly self-supporting; it would increase the weekly circulation and we could thereby charge more for our advertising matter. I bring this to your attention for thought and discussion.

DR. HYATT: It seems to me that we of New England are not much larger than many other states and that we have interests in common; that the NEW ENGLAND JOURNAL OF MEDICINE would be of much more value than our individual state journals and we could easily amalgamate and have a real journal, the best journal in the world. But we can do this only by laying aside our individual local interests and becoming one great New England state. Perhaps in order to do this we might incorporate the New England Medical Council and let the Council own the JOURNAL.

A question being asked as to whether the JOURNAL was self supporting, Dr. Bowers explained at some length the history and policy of the JOURNAL and its financial condition.

DR. RICKER: If all the societies of these states were in it and all took the whole 52 copies at $4.00 per year that would put the thing on a profitable basis, wouldn't it?

DR. BOWERS: I think so.

DR. STONE: Of course any proposition has got to come from outside of Massachusetts.

Meeting adjourned at 4.20 P. M.

VERMONT STATE MEDICAL SOCIETY

PROPER STANDARDS FOR THE PRODUCTION AND SHIPMENT OF MILK*

BY E. A. CROSSMAN, M.D.V.†

Mr. President, Ladies and Members of the Vermont State Medical Society:—

I WANT to assure you that I appreciate this opportunity of appearing before you and discussing a subject in which you, as individuals, and as an organization, should be deeply interested. First of all I want to impress you with the fact that I do not claim to be an authority or an expert on the subject you have assigned to me, that much of the material I will present to you today is not original but are the opinions of some of the best authorities who have given considerable thought and study to the production of clean milk. I may say nothing that some of you have not already heard.

A Bulletin on Milk Production published by the United States Department of Agriculture opens with the following sentence: "No greater field of usefulness exists than the production of milk for human consumption." This statement rings true to those of us who are interested in safeguarding the public and at the same time have in mind the producer. There is no branch of preventive medicine which requires more common sense in business than the milk question, which is as old as the cow itself.

We believe that milk is a necessity and as a food has played an intimate part in the affairs of men, from babyhood to old age. In America we believe it is an essential food for babies and growing children and, not withstanding a report that comes to us from Europe that adults should use milk sparingly, or eliminate it entirely as a food we still believe that the American diet is well rounded and milk being easily digested and easily assimilated comes near being the natural and normal food of the human individual.

There is no reason why every physician should not advise an increased use of milk, provided, however, that the milk is properly produced and properly handled from the farm to the consumer. Health authorities are more interested in seeing that this product, so potential for food is not converted into a product that is potential for harm.

There are several diseases which may be milk-borne but the most common ones are diphtheria, scarlet fever, septic sore throat, typhoid fever and bovine tuberculosis. Of these, the first four are diseases of acute onset and come to your notice probably in from one to three weeks. In the case of tuberculosis, however, many months or years may elapse before your attention is called to the disease. With the possible exception of septic sore throat, through infection of the udder by a milker, tuberculosis is the only disease of those named for which the cow herself may be held responsible. In all the other diseases the milk simply acts as a carrier or vehicle.

In discussing the production of milk on the farm in relation to diseases of animals, I want to take a little extra time in explaining the work of tuberculosis eradication as being carried on by the United States Government in co-öperation with the several states. A little over ten years have elapsed since this work was inaugurated and we are able to report over four million clean herds, free from tuberculosis containing approximately nineteen million cattle; 568 entire counties have been freed from tuberculosis and 21 towns in your own State of Vermont are on the modified accredited area list. North Carolina will be reported free during this month and the second State will probably be Maine, which we hope to report clean during the summer of 1929. This work alone, along with making the barns and premises more sanitary has had a tendency to improve, to a very large degree, the quality of milk now being placed on the market.

If we could impress upon every herd owner the duty he owes to himself and to the public, of maintaining a herd composed of only healthy cows, kept in a cleanly manner, much of our trouble would be ended. In fact, we should have everyone from those who do the milking to those who handle the milk from farm to consumer realize that this particular food is very easily contaminated and a great responsibility rests with them. It is the only animal product which is consumed to any extent in a raw state.

As many of the physicians in this Society come from rural communities I am going into some of the details which should be corrected in those communities not only pertaining to the production of milk but also to the consumption of milk. Most of our large cities and many of the smaller cities and towns are fairly well protected by local milk ordinances which do not apply to the smaller towns and villages and of course not to the farming districts. I want to quote Dr. Charles H. Mayo of the world famous Mayo Bros. Hospital at Rochester, Minn., on bovine tuberculosis. He says, "I believe in pasteurization, but I also strongly believe in the eradication of tuberculous animals from dairy herds. This can be done by careful testing. The testing should be repeated twice a year until the herd is free from disease. This is the only safe

*Read at the Annual Meeting of the Vermont State Medical Society at Burlington, October 11, 1928.

†For record and address of author see "This Week's Issue," page 676.

way for children on the farms where pasteurized milk can not be obtained. The majority of cases of tuberculosis in the neck, intestines, and abdomen are found in children from the farms and not from the city." Also from the Commissioner of Health of the State of Massachusetts who says, "In a recent examination of 10,000 Massachusetts school children, tests showed that the amount of tuberculous infection was 12% higher in rural children than in urban children. The conclusion is that the higher percentage is due almost altogether to the bovine form. In that particular series of examinations much more tuberculous peritonitis and glandular tuberculosis was found in country children than in city children."

Now we find that there is an increased demand for clean milk in the cities and larger towns and health officials are requiring that improved sanitary methods be used in its production. Unless care is taken in producing it great losses may result from the rejection of milk by the health departments. This places the responsibility squarely on the shoulders of the milk producers. On first thought it seems unfair to place any further burden on the one man who apparently has about as big a load as he can carry. On the other hand this responsibility is not so burdensome as it would have been years ago for there is now a clearer understanding of how to produce clean milk. By observing certain precautions clean milk can be produced with very little more effort than milk which is not clean. Clean milk can only be produced from healthy cows. Not only healthy in appearance but free from tuberculosis as determined by the application of the tuberculin test. The State and Federal Governments are assisting very materially in establishing tuberculosis-free herds on the farms. Milking cows should be kept clean. Before they are milked the udder and flank should be wiped with a clean damp cloth. This will take only a little extra time and will keep down the bacteria count materially. Since bacteria cause milk to sour they should be kept out of it by every possible means. From a health point of view there is danger from milk that contains large numbers of miscellaneous bacteria which may cause serious digestive troubles, especially in infants and invalids whose chief diet is milk. Cleanliness is not an absolute safeguard against disease, but it is a great factor in preventing contamination. Far be it from me to even suggest the remodeling of the barns in Vermont in which dairy cows are kept, but it is possible to clean up most of them, together with the surrounding premises so that a clean milk can be produced. Plenty of God's sunlight and ventilation will keep cows healthier and much less labor will be required to keep them clean. Brush down the cobwebs and apply some whitewash after cleaning the manure from the walls and stanchions. Every farmer can have clean overalls or other suitable clothing for use during milking. Milking stools should be washed occasionally and the hands should be dry and clean. Wet hand milking is a filthy habit and contaminates the milk. Do away with the old type milk pails and use up-to-date small top milk pails. They help in keeping dirt out of the milk to a great extent. It would seem unnecessary to mention the importance of a safe water supply on a farm, yet occasionally it is found that milk is being contaminated by polluted water. While the cattle should be kept from polluted water, especial attention should be paid to the purity of the water with which milk pails and other utensils are washed. No other source of milk contamination is quite as serious as improperly washed and sterilized milk utensils. The free use of hot water and washing powder is recommended. Afterward they should be rinsed and dried, preferably by steam. Where no sterilizer is available they should be inverted on a rack in the sun in a place as free from dust as possible. Every farmer should have a separate milk house or room. It should not be near the barnyard, pig pen, privy or other source of contamination. Those farmers or dairymen who have as yet neglected to provide a separate room for handling milk should take warning that the time has almost arrived when health officials will refuse their milk unless this essential matter has been taken care of. All milk should be strained to remove any insoluble dirt through a layer of sterile absorbent cotton placed between two clean strainer cloths. Impress your farmers that removing the dirt simply improves the appearance of milk but does not remove the bacteria carried by the dirt. Therefore, we want to keep the dirt out of the milk by observing cleanly methods. Milk should be cooled as quickly as possible after it is produced, and kept cold to prevent the multiplication of bacteria which unavoidably get into milk. If milk is cooled to 50 degrees F., or below and held at that temperature, bacterial development is retarded. Running water or ice may be used in a cooling or storage tank where the milk is kept until it leaves the farm.

So much for the production of milk. Nothing that I have recommended should be found to be burdensome to the farmer. Nothing radical has been suggested but just living up to the laws of decency. If we can improve the production of milk on the farms you will find a much improved rural community. Many physicians who have given the matter of baby feeding a great deal of thought are of the opinion that certain babies do better on raw milk than on any other product. More than 50% of the people in the United States live in rural districts or villages with 2500 population or less. According to statistics, 60% of the babies are born in the country. It is important therefore that these babies should get a good start in life. Let me read you a part of a report from a paper on the relative efficiency of raw and pasteurized milk in feeding a group of infants in the Preventive Clinic of

the Boston Dispensary, read at the annual meeting of the American Pediatric Society at Niagara Falls in June, 1927. Sixty-one children were fed pasteurized milk for an average of 6.9 months, gaining only 1.7% in development. With pasteurized milk supplemented with orange juice, the gain in percentage development for 59 other children for 7.2 months was 7.9% and with both orange juice and cod liver oil supplementing the pasteurized milk 72 children for 7 months gained 9.5% in development. Contrasted to this 17 babies fed 6.8 months gained 14% in development on raw milk (certified).

As for the sale of milk in cities and large towns there are so many different forms of milk ordinances that it would be impossible to discuss them in the time allotted to me but I shall try and speak of them in groups and indicate what in the opinion of our best students is, at least a satisfactory ordinance after having been in operation in many communities for several years. There are a certain number of people in every town and city who desire raw milk. Personally I believe that they are entitled to have their wishes granted and provision should be made for the sale of raw milk. Certified milk as produced and handled in conformity with the methods and standards, adopted by the American Association of Certified Milk Commission, can be sold in every community, I believe. I have in mind one city which proposed to change its milk ordinance so that certified milk must be pasteurized after January 1, 1929. I rather doubt whether or not this change will be made in view of the fact that prominent baby specialists are ardent believers in the virtue of raw milk. But certified milk is too expensive for many people in the group I have just mentioned as desiring raw milk. There are upward of 4,000 towns and cities which allow raw milk to be sold if produced under the methods I outlined in the first part of this paper, namely, clean milk from healthy cows, as determined by the tuberculin test and veterinary physical examination and proper housing, feeding and milking conditions and the proper care of the milk after it is produced. With the exception of these two grades of raw milk all other milk must be pasteurized. Dr. Milton J. Rosenau, Harvard Medical School, unhesitatingly recommends compulsory pasteurization of all milk not certified under the two classes of the classification just mentioned. From reports and statistics obtainable there appears to be a decided improvement in the milk supply since the adoption of such ordinances. I am satisfied that a simple ordinance as outlined will prove satisfactory in towns and cities of over 10,000 population. Pasteurization is not practical in communities of less than 10,000.

One of the first towns in Massachusetts to pass such an ordinance was the town of Milton, a suburb of Boston, with a population of about 14,000. After the ordinance had been in effect for a few years the town physician determined to satisfy himself whether any benefits had been derived from the enforcement of such an ordinance, as it was apparently proving to be annoying to the farmers in his district to have their cattle given an annual tuberculin test and confining their replacements to cattle from clean herds. He therefore applied a tuberculin test to a group of 69 babies in this town with the result that 1.4% reacted to the test. Occupying the position of town physician in an adjoining town which had no milk ordinance he tested 43 babies and 16.2% gave a positive reaction. In the town in which I reside, Needham, a residential suburb of Boston with a population of about 10,000 the infant mortality rate was approximately 75 for a number of years. A milk ordinance was put into effect several years ago and two years after the infant mortality rate dropped to 26 and has remained at about 25 for five consecutive years. I would not be so bold as to acclaim that the improvement in the death rate was entirely due to the improvement of the milk supply but I feel sure that it has played an important part.

Dr. Robert B. Kerr, Ex-Secretary of the New Hampshire Tuberculosis Association, said in an address to a group of State and Federal officials and others at the Weirs, N. H., last June that the deaths from non-pulmonary tuberculosis in 1917 in the city of Manchester were 35. In 1927 it had fallen to 14 and during last year not one child under three years of age died from any form of tuberculosis. The first year in the history of the city when this had occurred. It is interesting to note, he says, in this connection, that during the past ten year period the local Board of Health has been each year tightening up its regulations for the safeguarding of the milk supply in that city.

Your attention is now called to another form of milk ordinance which has been adopted by several large cities and we believe to be a decided improvement over the ones described. It provides that all milk must be from healthy cattle as determined by veterinary examination and the tuberculin test, and then pasteurized under official supervision. Chicago, the first large city to adopt this requirement had a real battle but its efficient health officer, Dr. Herman N. Bundersen was able to put it through, notwithstanding the opposition. After a trial of more than two years the results obtained would seem to indicate the justification of the adoption of this rigid ordinance. During the first year this requirement was in force 532 fewer baby deaths were recorded than in the preceding year. Deaths from diarrhea and enteritis among children under two years of age were reduced 33.2% for the same period. Milk alone contributed greatly toward that. Following Chicago, Baltimore, Cleveland, Detroit, Milwaukee and Akron and many smaller cities adopted similar requirements. We look forward to the

time when every city in the United States will be as well protected. But it must be brought about gradually and only as fast as the farmer and dairyman can meet the requirements without financial loss.

I rather expect there will be some criticism of the suggestions I have offered today. If they are constructive we welcome them. Already this state like many others has been pretty well circularized by a pamphlet sent out by the American Medical Liberty League prepared by George Starr White, M.D., N.D., D.O., D.C.O.H.C., P.H.D., L.L.D., F.S., S.C. Lond. I confess that I do not know the exact meaning of some of these degrees, nor what the object of the League is, in attacking this livestock sanitary problem. If you want a little relaxation some evening after a busy day, and feel that a laugh will do you good (for after all a little nonsense occasionally does no harm), get out Vol. 81, No. 24 of the Journal of the American Medical Association, dated Dec. 15, 1923, and turn to pages 2050-53 and see what it has to say about George Starr White. Perhaps it is sufficient to say that he was a disciple of Dr. Albert Abrams, San Francisco, the man who was able to make a diagnosis by a specimen of blood, saliva or handwriting. Diagnoses of tuberculosis, syphilis and other diseases were made from the handwriting of persons dead for from 50 to 150 years. From a specimen of blood taken from a perfectly respectable Plymouth Rock rooster the report from the Laboratory indicated that the patient was suffering from congenital syphilis, carcinoma of stomach, small and large intestine, colon, pancreas, kidney and bladder, epithelioma, sarcoma of spine, chronic malaria and diabetes. That may look pretty bad to you but the doctor thought the chances for recovery were very good. I expect we are to have these so-called experts with us to the end. Fortunately their advice is so ridiculous that it does not hamper the work to any extent even among the most ignorant.

The subject of the production of clean milk has been given an exhaustive study, especially its effect upon public health and the welfare of society at large. From experience we have learned of its importance. We are going forward, bearing in mind that we must be fair to the farmer who produces this milk and fair to the consuming public and always honest with ourselves.

Discussion

Mr. Frayer: *Mr. President, Ladies and Gentlemen*—I have enjoyed very much the paper by Dr. Crossman, particularly that portion which dealt with the relation of Bovine Tuberculosis to the health of the human family. That is a phase of the problem of supplying better and safer milk which is more and more receiving the attention that it deserves. It may interest you to know that the Burlington milk ordinance demands that all milk sold in the city must come from tuberculosis free cows as disclosed by the official tuberculin test given by an approved veterinarian. They must be tested at least once each year.

In Dr. Crossman's treatment of the problem of the care, handling and transportation of milk and milk products there is little of a controversial nature, as he has outlined practices which are well recognized as essential so that I will confine my few remarks to mentioning some of the problems of the milk inspector in trying to put across some of these things.

I believe that the problem is less of legislation and more of education. My experience on the business end of a milk ordinance has brought home to me the fact that the things that are forced on the producer are done half heartedly but the practices that he accepts because he believes in them are done whole-heartedly.

The idea back of all milk ordinances is to get the product into the hands of the consumer in a safe and healthful condition—therefore the problem resolves itself into the important one of getting the idea behind the ordinance back to the men who produce and handle the milk.

We hear much about the slogan "CLEAN and COLD" in connection with proper milk production. However, the problem to get across is the degree of cleanliness necessary, for clean is only a relative term to most people.

The producer may proudly exhibit his pails and other utensils which to all appearances may be clean and yet fall far short of cleanliness from the bacteriological standpoint. The problem, then, is of getting this distinction across to him. In other words, the connection between extreme cleanliness and low bacteria counts and between indifferent cleanliness and high bacteria counts.

The handling of milk is both an economic and a health problem, an economic one in that the distributor seeks in every way known to science to prolong the life of his product and thereby decrease the losses incident to spoilage, and a health problem in that we try to safeguard it from contamination by any of the several disease producing organisms commonly carried by milk. The unfortunate part of it is that many of our trade magazines treat it from the economic standpoint alone so that these two ideals do not always walk hand in hand.

As many of you know, Dr. Mayo of Rochester, Minn., is health officer in his home town and he has a very fine herd of cows on his farm near there. This herd is an accredited one. Nevertheless he insists on every drop of milk being pasteurized as an added precaution.

I am glad of this opportunity of appearing before you and I am also glad that this Society recognizes the great importance of milk to the public health. This country consumes more fluid milk per capita than any other nation on earth by a wide margin so that this problem of the proper care, handling and transportation of milk is a vital one. I thank you.

RECENT DEATHS

DR. GEORGE F. ADAMS

Dr. George F. Adams, whose death occurred early in March, 1929 was an able and much respected citizen of Newport, Vermont.

He was born in Newport, March 29, 1854, prepared for college at New Hampton Institute, N. H., graduating from Bates College, Lewiston, Maine, in 1878. He attended the medical department of Dartmouth College one year and graduated from the medical department of University of Vermont in 1879.

He practiced medicine in the towns of Coventry, Newport and Lunenburg, Vermont, moving to Livermore, Maine, where he established a thriving practice. After fire swept the business section of the town, he moved to West Derby, now a part of Newport. During nearly forty years of practice in this vicinity, he was prominent in the affairs of the town.

He was a member of the Vermont State Medical Society and at one time was president of the Orleans Co. Medical Society. He was health officer in Derby for several years, also examining physician in the Order of Railroad Trainmen and on the board of pension examiners. He was a Mason and Knights Templar.

In 1885 he married Miss Cora E. Cheney of Newport who died in September, 1919. He leaves two sons, George C. Jr., and Irving R. Adams. His death was the result of influenza with complications.

DR. ROLAND M. McSWEENEY

The funeral of Dr. Roland M. McSweeney was held March 1, 1929. In the passing of Dr. McSweeney, St. Johnsbury loses one of her oldest and best known medical men.

Dr. McSweeney was born in Cork, Ireland and was in his sixty-seventh year. He came to this country with his parents when two years old, the family locating in North Creek, N. Y.

He was the oldest of nine children. He received his preparatory education in Glen Falls, N. Y., entering the Vermont Medical School of Burlington and graduating in the class of 1892. He first practiced in Irasburg moving later to St. Johnsbury where he practiced until the time of his death.

He was a most kindly man and a skillful physician. He was twice married, his second wife surviving him. He also leaves a son, Dr. Roland E. McSweeney, of Brattleboro, Vt. and three other sons and a daughter.

Dr. McSweeney was a member of St. Aloysius Church, a charter member of Knights of Columbus, and a member of County, State and National Medical Associations.

MISCELLANY

WASHINGTON COUNTY ITEMS

Dr. J. W. Jackson has returned to his practice from a sojourn in the south.

Mr. M. J. Antil, a senior medical student at the University of Vermont College of Medicine, has been passing a month in study with Dr. J. A. Wark of Barre. This is along the lines being tried out at the University. At present Mr. R. A. Gilson is at the Washington County Hospital.

On March 1 Dr. A. E. Lazell revived an old custom of having a "party" at his house for the local doctors. On entering the living room one saw a warning sign of $.25 fine for "talking shop". (No fines were collected.) A game of 5 and 10 and refreshments entertained the party. Luncheon was served about 11. Everyone present wished that these meetings might be held more often.

The next County meeting will be turned over to the S. B. H. program, March 29.

UNIVERSITY OF VERMONT MEDICAL COLLEGE NOTES

Dr. E. F. Traube of New York held clinics in Dermatology at the Mary Fletcher Hospital on March 1 and 2, 1929.

Dr. Brainerd Whitbeck of New York, Professor of Orthopedic Surgery held a diagnostic clinic at the Mary Fletcher Hospital on March 8 and an operative clinic Saturday morning March 10, 1929. This is the first of a series of clinics to be held by Dr. Whitbeck.

Dr. J. N. Jenne, Dean of the Medical School, and Dr. T. S. Brown, Professor of Anatomy and Superintendent of the Mary Fletcher Hospital, attended the Congress of the Council of the A. M. A. on Education and Hospitals held in Chicago, Feb. 18, 19, and 20, 1929.

BURLINGTON AND CHITTENDEN COUNTY CLINICAL SOCIETY

The regular monthly meeting of the Society was held at the medical college on Thursday evening, February 28. Dr. D. M. Bosworth of New York read the paper of the evening entitled "Low Back Pain—Medical, Gynecological or Orthopedic?" The paper was well illustrated by lantern slides. Dr. Bosworth was formerly an instructor in anatomy at the medical schools.

W. T. REES, M.D.
62 Bradley street, Burlington, Vt.

BENNINGTON COUNTY MEDICAL SOCIETY NOTES

The society met at the Putnam Memorial Hospital, Bennington, March 12, 1929.

The society was addressed by Dr. Charles F. Dalton, President of the Vermont State Medical Society. His subject was "The Importance of Vital Statistics."

Dr. W. G. Ricker delivered a paper on "The Care of the Eyes in Infancy."

Dr. Charles K. Johnson, Professor of Pediatrics of the University of Vermont addressed the society on "The Reduction of Infant Mortality."

Dr. Oliver N. Eastman, Professor of Obstetrics of the University of Vermont, addressed the meeting on the subject: "The Reduction of Maternal Mortality."

The meeting was well attended and at its conclusion the visiting doctors and several of the local physicians journeyed to Troy, N. Y. and attended the meeting of the Rennselaer County Medical Society.

J. D. LANE, *Secretary.*

COUNTY MEETINGS

The Vermont State Board of Health and the Vermont State Medical Society acting jointly are holding County Meetings with each local Society in the State during the month of March in the interest of maternal and infant welfare.

The program given at each meeting is as follows:

"The Importance of Vital Statistics," Charles F. Dalton, President Vermont State Medical Society and Secretary Vermont State Board of Health.

"Care of the Eyes in Infancy," Wm. G. Ricker, Secretary Vermont State Medical Society and Member of the Vermont State Board of Health.

"The Reduction of Infant Mortality," Charles F. Johnson, Professor of Pediatrics, University of Vermont.

"The Reduction of Maternal Mortality," O. N. Eastman, Professor of Obstetrics, University of Vermont.

The dates and places of these meetings are: Franklin County, March 11; Bennington County, March 12; Rutland County, March 13; Addison County, March 14; Chittenden County, March 15; Windham County, March 25; Windsor County, March 26; Northeastern County, March 27; Lamoille County, March 28; Washington County, March 29.

At the date of writing the first week's schedule has been completed. The meeting of Franklin County was held in the parlors of the Tavern at St. Albans and attended by about half the membership of the Society. The Bennington County meeting was held in the rooms of the Nurses' Home at the Putnam Hospital, a separate report of which is printed elsewhere in this issue. Considerably more than half the County membership was present. The third meeting was held in the Doctors' Conference Room at the Rutland Hospital in the evening, followed by a lunch. Here again, over half the membership was present. The Addison County meeting which was held in the parlors of the Hotel at Middlebury was attended by two-fifths of the membership, and the Chittenden County meeting was held in the Lecture Hall of the University of Vermont at Burlington with a good attendance.

The second series of meetings has not been held at the time of this writing. Thus far there has been a most cordial reception and a great deal of interest shown not only in the subjects under discussion but in the activities of the State Society and in the Vermont State Board of Health. Inasmuch as two men hold official positions in these two organizations it has been a most opportune year for these conferences.

A report of the later meetings will appear in the April issue and in a later issue a résumé of the four papers will be printed.

REPORT OF VERMONT DEPARTMENT OF PUBLIC HEALTH, FEBRUARY, 1929

The incidence of communicable diseases reported to this office during the month of February is as follows: Chickenpox 99, diphtheria 17, influenza 263, measles 195, mumps 261, scarlet fever 37, smallpox 13, typhoid fever 2, whooping cough 108, tuberculosis 9.

Sixteen hundred examinations were made by the Laboratory of Hygiene, divided as follows:

Examinations	
For diphtheria bacilli	549
For Widal reaction of typhoid fever	24
For malarial parasites	0
For tubercle bacilli	200
For evidence of syphilis	306
For gonococci in pus	117
Of blood for contagious abortion in cattle	128
Of water, chemical and bacteriological	25
Of water, bacteriological	106
Of milk, market	52
Of milk, submitted for chemical only	1
Of milk, submitted for microscopical only	0
Of foods	17
Of drugs	4
For the courts, autopsies	2
For the courts, miscellaneous	18
Autopsies to complete death returns	1
Miscellaneous examinations	50

In the Venereal Disease Division 1 gonorrhea case reported for treatment, 2 for syphilitic treatment, 2 cases for intravenous treatment. There were 54 cases of syphilis reported and 29 cases of gonorrhea. 108 gonorrhea outfits sent out and 232 Wassermann outfits.

The Division of Tuberculosis published and distributed 10,500 copies of the Modern Health Crusader. This little paper has been changed to the form of a magazine.

Thirty-eight patients were seen by the After-care Poliomyelitis Division, 39 home visits made, 3 doctors visited, 3 new pieces of apparatus fitted, 7 pieces of apparatus altered or repaired, 7 orthopedic corrections made to shoes, 9 admissions to hospitals and 4 patients discharged from hospitals. Sales amounting to $23.15 were made by the vocational worker of this Division.

In the Division of Maternity and Infancy, classes in infant hygiene have been conducted in seven towns, with an attendance of over 299 girls. This work is well received by both teachers and pupils.

Case Records of the Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

THE CABOT CASE RECORDS IN GROUP DISCUSSIONS: FOUR TYPICAL METHODS OF USE

As the Case Records of the Massachusetts General Hospital enter upon their fifteenth year of publication there are some new evidences of their usefulness to report.

The value not only of clinical-pathologic case study in general but of these published discussions in particular has recently been proved in a rather interesting way. For the benefit of some of the societies in which the Case Records are used the editors offered last autumn to send out clinical histories with sealed clinical and anatomic diagnoses in advance of publication. It was thought that the obvious advantages of this plan would offset the disadvantage of not having the report of the discussion and the detail of the autopsy findings at hand at the time of the society meeting, perhaps not until weeks later. It was found, however, that the societies considered the full discussions indispensable. Dr. George L. West, secretary of the Newton Hospital Clinical Club, Newton, Massachusetts, writes: "I find that the members of the Club do not receive the unpublished papers with the same interest that they do the published cases. In the first place, they miss the authoritative discussion of Dr. Cabot. . . . Again, questions arise which are not always answered in Dr. Cabot's discussion, and the autopsy report in its details frequently serves to settle such questions." In two other societies the unpublished cases were not even given a trial. Dr. Clarence A. Wells of the Quincy, Illinois, Physicians' Study Club writes, "I fear that the Club may not see the advantage of the use of these early reports for the reason that we all so much enjoy the discussions as found in the completed Case Record. . . . Our Club is now entering upon its eighth year, and we know that we are getting a great deal of benefit out of the time given to the study of the Case Records. I am frank to say that we find Dr. Cabot's discussions very illuminating and piquant, and every member is more than pleased when it is announced that he is the one who discusses the case." Dr. C. E. Yount of the Yavapai County, Arizona, Medical Society writes, "The chairman of our board of judges told me recently that he was unable to use the unpublished case records because they do not contain the discussions. . . . With Dr. Cabot's discussion we have this same case presented by a master teacher. With all the evaluation of symptoms and laboratory and post-mortem findings added we have really, as you can see, a wonderfully helpful session. It is this type of discussion, which includes Dr. Cabot's analysis and the post-mortem findings, that has held our groups to the Cabot Case Records. I believe that you will agree with me that this system of teaching is unique in American medicine, probably in world medicine. We have found it of the greatest assistance."

For the benefit of other clinical groups it is worth while to give the main features of the methods of these three societies and of a fourth in which the Case Records have been used to advantage for years. The societies represent strongly contrasting regions and conditions. One is near Boston. Two are in fair sized cities of the Middle West. The fourth is in a small Arizona city. Their distribution is one more evidence of the service the Case Records have done throughout their fourteen years in carrying Boston medicine in a living form to distant places. The four methods, both in their similarities and their differences, furnish suggestions which may prove helpful to other societies.

The original and stimulating method which has been worked out in the Yavapai County Medical Society with the medical officers at Fort Whipple has been reported in detail by Dr. Yount[1], to whom its development and success are largely due. He writes, "The method used during the past year is the fruit of mature experience and the end result of years of evolution. . . . Certainly each year has shown increased interest and closer study."

The members are divided into three carefully balanced groups which serve for a year. Three judges are appointed, also for a year. They select and assign the cases and send out the clinical histories two weeks in advance. Meetings are held biweekly from October to April. Two groups take part at each meeting, each presenting and discussing a case after careful previous preparation. After each group has finished its discussion, which is strictly limited to thirty minutes, one of the judges reads the Massachusetts General Hospital discussion and autopsy findings. The judges then retire and prepare their ratings. These ratings are given in sealed envelopes to the secretary and are held until the end of the year. At the annual dinner —for which, by the way, the two losing groups must pay—the chairman of the board of judges announces the winning group.

Even a bare outline of this method indicates the sound psychology at the basis of its success. Emulation with good comradery, the principles of good sportsmanship, have been ingeniously worked into the whole structure. Dr. Yount's full report is well worth the attention of other

societies. He gives the following results of their work:

"1. This year we had an average of twenty-one doctors at each meeting, or a general average of 99.5 per cent attendance for the three groups for the series of winter meetings. We mention with considerable pride this remarkable percentage for attendance, and present it as evidence that we have developed an interesting plan for postgraduate work.

"2. Men who at the beginning of the course could not get up on their feet because of stage fright are now discussing their cases with enthusiasm.

"3. The division of the doctors into well balanced groups and the placing of these groups in competition with each other is believed to be an important feature of the scheme for study which we have developed, because it promotes fellowship and good feeling, a wonderful degree of co-öperation, and stimulates each individual in the group to engage in close study in order that he may carry his share of the group burden.

"4. Last, but most important of all, it has taught us carefully to evaluate and draw logical conclusions from the data available, and we are confident that this training has made better doctors of all of us.

"For nine evenings each winter since 1921 we have, figuratively speaking, transported Dr. Richard C. Cabot and his colleagues from the Massachusetts General Hospital, Boston, to Prescott, Arizona, at no greater cost than a subscription to the published Cabot Clinics, or the NEW ENGLAND JOURNAL OF MEDICINE, plus the effort necessary to operate the plan just described. The effort would have been abortive years ago were it not for the fact that we have at Whipple and in our County Society doctors with a genuine thirst for medical knowledge, a determination 'to know what others have known' and what others know, coupled with a will to do and an inherent compatibility which enables us to work together as a guild.

"We commend this plan to your earnest consideration, and we predict that if you adopt it in your respective county societies you will not be disappointed in the results you will obtain, and that after experience with it you will be as enthusiastic about it as we are."

An outgrowth of the work of this society has been developing during the past year with promise of a future of increasing value to medical men in the Southwest. In March, 1928, *Southwestern Medicine*, the official organ of the medical societies of Arizona, New Mexico, El Paso County of Texas, and of the Medical and Surgical Association of the Southwest, began publishing the discussions of the Yavapai County and Fort Whipple group. By May the idea had developed to include other societies. With the co-öperation of the Arizona State Medical Society it was planned to publish the clinical histories of the cases discussed by the Yavapai County Society without the discussions, inviting other societies to discuss them and send in their results for publication in *Southwestern Medicine* together with the discussions at Prescott and the Massachusetts General Hospital. By November the new "Open Forum in Diagnosis" had grown into a department of nineteen pages. In January *Southwestern Medicine* announced a further development. "There is now being offered by this journal a plan whereby the smallest county society (we have one in Arizona with three members) can have regular and profitable meetings and keep itself on record. This journal will send to any county society printed copies of case histories sufficient to supply all their members. The members of that society can arrange to meet once a month at luncheon at some member's home or at a centrally located office or wherever they choose, briefly discuss these histories, endorse their diagnostic conclusions on the history sheet and mail them back to this journal. They will then go on record as having held a regular county society meeting, with some valuable clinical discussions." Dr. Watkins, the editor, writes, "We are using the cases which are to be studied by the Yavapai County Medical Society. We then gather in such discussions of them as have been made at various societies and print the whole record,—(1) the case history, (2) discussions by various societies or individuals, (3) the discussion at the Massachusetts General Hospital, with autopsy findings." In this way *Southwestern Medicine* avoids the lapse of a month or two between the appearance of the head of a Case Record and its body, besides adding convenience and incentive to the discussion of these cases by county societies throughout the states in its territory. The whole vigorously developing plan is more than a notable feat of medical journalism; it is a genuine stroke of medical statesmanship.

The methods of the other three societies to be considered here are more informal than that of the Yavapai County Society. The Newton Hospital Clinical Club meets biweekly and discusses two cases. The secretary is responsible for their selection and for having the clinical histories sent out several days before the meeting. Two principals are named in advance, one to present each case and lead in its discussion. The questioning and comment are free throughout, and the discussion is often very lively. At the end each man registers his diagnosis before the discussion and autopsy findings at the Massachusetts General Hospital are read.

At the Quincy Physicians' Study Club every man is required to hand in a written diagnosis after the clinical history is read. A leader, appointed at each meeting for the next, takes up the diagnoses one by one. Each man discusses his own. A copy of the discussion and autopsy

at the Massachusetts General Hospital is then given to each man. After it has been read aloud there is general discussion. This club meets twice a month, discussing one case. The leader is responsible for the selection, the secretary for sending out the history.

The Cabot Club of Jefferson City, Missouri, meets weekly at a luncheon. One case is discussed. The history is read aloud, as usual. Each man is then given a few minutes to discuss the case and give his diagnosis. Then the Massachusetts General Hospital discussion and autopsy are read. In this club the responsibility for selecting the case and sending out the clinical history is taken by each member in turn.

In addition to the case discussions the programs of two of these societies include some work of a different sort. At Prescott three of the twelve yearly meetings are given to the presentation of papers and the various other things which make up the usual type of society meeting. At Quincy each meeting includes a report of recent progress in the particular branch of medicine or surgery in which the member who makes the report is especially interested. Sociability of course plays an important part in all the clubs.

It is striking that at the end of seven to nine years of biweekly or weekly meetings—in the Yavapai County Society the Case Records have been used in one way or another, with a break during the war, since 1915—all these societies report steady or increasing enthusiasm. Each is convinced of the merits of its own method. The Newton club, in its ninth year, has a growing attendance. The club emphasizes the advantage of its informal and lively discussion, the responsibility of leadership required of every man in rotation, and the fact that only one judge is cut off from the benefits of study and discussion. Dr. West writes, "I believe that the benefit from this particular method of study has been of positive effect in elevating the standard of medical practice at the hospital and in the city. It is a tribute to your development of the case study method that a clinical club can carry on for years with so much enthusiastic interest and benefit." Dr. Wells of Quincy writes, "The work of the Quincy Physicians' Study Club has been most profitable to the members, all of whom are better diagnosticians than they were five years ago." Dr. Hill of Jefferson City writes, "As time goes on we become more enthusiastic. It has created a better professional spirit. We give and take most cheerfully in our discussions. It stimulates study and has wonderfully developed our mental powers for accurate diagnosis. Some of our perplexing problems have been solved by these Case Record studies." Dr. Yount writes, "I really think that if other groups of medical men, whether they are in the city or the country, would follow out the line of study as we have published it they could get nothing better than these Case Records."

These four societies furnish typical examples of the work that is being done with the Case Records in many such groups. These discussions are teaching men to think,—the highest achievement of all teaching, and especially needed in a time when the tendency in medicine increasingly is toward dependence upon technic rather than upon observation and reasoning.

CONCLUSION

The experience of these societies shows that the Case Records furnish a basis upon which societies can conduct work for six to nine years with increasing enthusiasm due to steady gain of the members in diagnostic ability, reasoning power and professional good feeling. These gains hold through the widest variety of methods, from brief informal comment at a luncheon to elaborately systematized group competition running throughout a year's work. The constant factors in all these successful results are:

1. Material for the study of clinical problems in diagnosis in the light of recent advances in technic and for the checking up of these studies later by autopsy.
2. The stimulus of the meeting of minds on these common problems in the spirit of good fellowship and good sportsmanship.
3. The opportunity of comparing the group reasoning with the reasoning of diagnosticians of notable experience and intellectual power.

REFERENCE

1 Yount, C. E., and Allee, G. D.: The Yavapai County Medical Society Plan of Postgraduate Study. Southwestern Med., 11:431, 1927.

CASE 15131

CARDIAC PAIN

Medical Department

An American factory superintendent fifty years old entered November 21.

Three years before admission he had to stop playing tennis because of dyspnea. For three years he had had "dull palpitating ache" over the heart, dyspnea and pounding of the heart on running upstairs. He had so many "rheumatic" pains at the time that he did not remember whether the pain radiated. Occasionally he had very slight swelling of the ankles. All the symptoms grew slowly worse until seven months before admission. Then he woke one morning with a sharp shooting pain over the precordium darting across the chest to the right side and down both arms. He had to make a desperate effort to catch his breath. He felt an intense constriction over his neck and chest and a sense of impending death. His physician gave him white pills and laid him on the floor with his feet elevated. At this the patient fainted. He was given narcosis, but knew that the same pain and attack returned spasmodically during the next day. For five days he was propped up in a chair. He was able to return to work.

At this point in the history taking the patient had the attack described below and died.

Clinical examination showed a well nourished, slightly cyanotic, orthopneic, very ill looking man with slightly slow mental reactions. Speech distinct but slow. Pyorrhea. Tonsils enlarged, right more than left. Right posterior pillar occluded most of the right half of the posterior pharynx, slightly red, good view not obtained. Lungs emphysematous, resonant, a few râles in the left base. Tactile fremitus and spoken voice normal. Apex impulse of the heart not seen or felt. Left border of dullness 11.5 centimeters to the left of midsternum, 3.5 centimeters outside the midclavicular line, right border 4 centimeters, supracardiac dullness 6. Apex rate too rapid to count, over 190. Sounds irregular in rate and of tic-tac quality. No murmurs, accentuation or thrills made out. Peripheral pulse very weak and irregular, rate 80 to 100. (Could not be counted accurately.) Blood pressure 140/105. Liver two to three centimeters below the costal margin. Slight tenderness. Stomach area very tympanitic. No other organs or masses felt. Slight swelling of the feet which appeared more edematous but pitted only slightly on pressure. Erythematous area over the left instep. Pupils and reflexes normal.

Urine: amount not recorded, cloudy at the single examination, specific gravity 1.030, a slight trace of albumin, ferric chloride strongly positive, about 20 leukocytes per field. Renal function 40 per cent. Blood: 20,950 to 25,000 leukocytes, 84 per cent polymorphonuclears, hemoglobin 100 per cent, reds 5,200,000, smear normal. Wassermann negative.

Temperature 98.4° to 100.8°, rectal; pulse 62 to 102, respirations 32 to 22.

The day of death, November 23, Dr. Paul D. White wrote, "The electrocardiogram this morning was very interesting, almost unique—(we have seen only one such record here in thirteen years)—paroxysmal ventricular tachycardia from two ectopic foci (often alternating)." The ventricular rate was 180, the auricular rate 108(?). P was best seen in Lead III.

During the history taking the patient said that he wanted to stretch his leg, leaned towards the side of the bed as if to do so and said quietly—"Now I am going . . . ". Suddenly his whole body stiffened, his head fell back, his eyes took an ominous stare and he gave a spasmodic gasp. On the arrival of the house-officer he was cyanotic and pulseless. No cardiac sounds could be heard. He was apneic for about a minute, then gave a loud gasping inspiratory cry followed by about forty-five seconds of apnea and a second gasp which was his last respiratory effort. These gasps sounded as though pulmonary edema was marked. Artificial respiration was continued for about nine minutes after the last inspiration. Then the patient died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

We should notice the way this pain came on, when the patient was completely at rest. He woke in the morning with it. I have never known that precise picture in anything except *cardiac infarction*.

I wonder why the physician thought this postural treatment necessary. I think I would rather be let alone if I were in this condition.

I suppose the clinical examination was made before the history was taken.

NOTES ON THE PHYSICAL EXAMINATION

"Lungs emphysematous" I suppose means hyperresonant, which is an entirely different thing. With "tactile fremitus and spoken voice normal" it is all the more difficult to make the diagnosis of emphysema, although he may have had it.

Half of the heart beats were not coming through. The blood pressure is rather surprising, I think, considering the state of the pulse.

Dr. White's findings can easily be connected with the thing we are suspecting, namely cardiac infarction.

There is nothing unusual about the events in the last paragraph. Many patients, whatever they die of, have just that kind of respiratory irregularity. They were watching him carefully and so they put it down, but it does not signify anything.

DIFFERENTIAL DIAGNOSIS

He died of cardiac infarction, so far as I can see. What else can we think of? We have a high diastolic blood pressure. We have a man who has had dyspnea, who shows no evidence of a valvular lesion, and who is fifty years old. Therefore a long-standing hypertensive heart trouble is the most natural thing to think of, and in view of this symptom complex we should also say coronary disease, narrowing or sclerosis of the coronary arteries.

I do not see that we have any evidence pointing to any other system. He will probably have passive congestion and may have a patch of pericarditis, as so often occurs with cardiac infarction. But we can get leukocytosis without pericarditis in these cases. If he has had one, he has probably had more (older) infarctions. Patients usually have different ages of infarctions in the heart, so I should not be surprised if there were old fibrous patches corresponding to old as well as new infarctions here. They do not usually die in the first attack. They often live months, sometimes years after an attack which one cannot doubt (looking at the old patches in the heart wall at necropsy) was infarction.

A Student: Does the cyanosis suggest pulmonary embolism?

DR. CABOT: I should not think so.

A STUDENT: Do you think he might have had a spontaneous rupture of the heart?

DR. CABOT: Yes. But we do not need to think so. There are no known symptoms peculiar to rupture of the heart. Infarction with rupture gives just the same symptoms as infarction without rupture.

A STUDENT: What are the differential points between angina pectoris and coronary occlusion?

DR. CABOT: Angina is brought on by exertion or emotion. It is a short pain, lasts a minute or two and stops when the cause is removed —the exertion or the emotion. On the other hand infarction is just as apt to come on at rest as when moving, it lasts an hour or more ordinarily, and is not relieved in the way that angina is by keeping quiet or by taking nitroglycerin. It sometimes is not relieved even by morphia. Moreover pulse failure or faintness often come with infarction and rarely with angina.

A STUDENT: Do you think this first "dull palpitating ache" was the ordinary variety of angina and that he later developed infarction on top of it?

DR. CABOT: That is perfectly possible. We often do have angina earlier in the history of cases of infarction.

Continuing our differential diagnosis of angina and infarction:—a good many cases of infarction of the heart have pain down in the epigastrium, so that there have been a good many operations done with the idea that it was perforation of an ulcer or some other acute abdominal lesion. Ordinary angina very seldom goes so low as that. I do not know any reason for the difference. With infarction we often get temperature and leukocytosis, whether there is pericarditis, as very often there is, or not. I do not remember seeing either temperature or leukocytosis in ordinary angina pectoris.

A STUDENT: What were the urinary findings?

DR. CABOT: The striking thing, of course, is that the ferric chloride is strongly positive. I suppose he probably had had very little to eat for some time. It was a starvation reaction I believe. The rest does not seem to me important.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Arteriosclerotic and hypertensive heart disease with angina.

DR. CABOT'S DIAGNOSIS

Cardiac infarction.
Hypertensive heart disease.
Coronary sclerosis.
Pericarditis?
Chronic passive congestion.

ANATOMIC DIAGNOSES

1. *Primary disease.*

Arteriosclerosis.
Coronary sclerosis with thrombosis and occlusion.
Infarct of the heart.

2. *Secondary or terminal lesions.*

Fibrinous pericarditis.
Hypertrophy and dilatation of the heart.
Arteriosclerotic nephritis (combined large and small vessel types).
Chronic passive congestion.

3. *Historical landmarks.*

Chronic prostatitis (slight).

DR. TRACY B. MALLORY: The heart was considerably hypertrophied. At the apex of the left ventricle were soft focal areas, some red, others white and fibrous, which on section proved to be due to almost complete necrosis of the whole thickness of the ventricular wall. The valves were entirely negative. The coronary arteries showed marked sclerosis. The right was patent, but the left showed a point of marked narrowing about two and a half centimeters from the orifice of the descending branch, where a fresh thrombus was present. There was a generalized sclerosis as well, and a fairly marked arteriosclerotic nephritis.

A STUDENT: There was no rupture of the ventricle?

DR. MALLORY: No. There was a slight degree of pericarditis.

CASE 15132

PAINFUL GANGRENE OF TOES; ILLUSTRATING A NEW METHOD OF CONTROLLING PAIN

SURGICAL DEPARTMENT

A laborer thirty-six years old of French Canadian parentage entered November 22 complaining of pain and swelling of the right foot with purulent discharge from the stump of the middle toe.

Fourteen weeks before admission he fractured the toe. It was not cut, but immediately began to swell and to give steady, sharp, stabbing pain. A physician set and splinted the broken toe. The pain and swelling increased, becoming so severe that he could not sleep that night. The swelling spread to the whole foot. After four weeks he went to another physician, who removed the splint and found a black spot on the side of the toe. Local applications gave no relief. Five weeks before admission the toe was loose. The doctor removed it. Pus came out from the stump and had continued to drain.

The pain and swelling still continued about the same. A week before admission the swelling increased and spread to the midleg. Two days before admission the swelling in the leg subsided. That in the ankle and foot persisted. He could sleep only in short naps. He had no systemic symptoms except that he felt tired because of loss of sleep. He urinated two or three times at night because he drank much water. During the past three weeks he had had cough with white sputum. After he had read for a while his vision became blurred and his eyes felt very tired. He had not been able to work since the onset of the trouble.

His family history and past history were negative. Several years before admission an injured finger healed well. He smoked two packages of cigarettes daily.

Clinical examination was negative except for the local condition. The base of the amputated toe was raw and infected, with a black gangrenous area around it extending to the side of the second toe. The whole right foot was red, tender to deep pressure and showed pitting edema. The foot blanched in fifteen seconds when elevated above the cardiac level. The color returned in thirty seconds on the level. The right foot was colder than the left foot. No dorsalis pedis or posterior tibial pulsation was felt. The left foot was warm. No arteries were palpable in the foot. The popliteal pulse was palpable in both legs.

Before operation urine normal, blood not recorded except 16,400 to 17,900 leukocytes. Hinton test negative.

Before operation temperature 100.8° to 98°, pulse 108 to 78, respirations normal.

X-ray showed no definite abnormalities of the bones of the feet and no visible calcification in the arteries.

Under morphia in one-sixth grain doses every three hours p.r.n. (usually given once a day) the patient was fairly comfortable except for considerable pain at night and a great deal when his foot was dressed. The foot remained in essentially the same condition. The area of discoloration spread slightly. November 26 he was started on Dakin's. Two days later the foot was less red but was slightly more swollen. The ball of the foot, under the heads of the second and third metatarsals, then became distinctly tender to palpation.

Discussion

BY JAMES C. WHITE, M.D.

Here we are dealing with a healthy French-Canadian thirty-six years old. Of the common constitutional factors which predispose to gangrene of the feet, this patient is too young to make arteriosclerosis a likely factor, and no signs of it are found elsewhere in his body. He has no evidence of syphilis, diabetes or obvious disease of his spinal cord. There is no abnormal degree of vasomotor spasm or relaxation in his other extremities. Among the purely local causes of gangrene we have no history of his having frozen his toes or applied a strong phenol ointment. All of these common predisposing causes of arterial disease should be ruled out in every case of peripheral gangrene.

We still have two important causes of gangrene to consider,—i. e. thrombo-angiitis obliterans and sepsis. There is also the rare arterial disease, Mönckeberg's sclerosis. This also occurs in young men. Although a distinct histological entity, it cannot be distinguished clinically from Buerger's disease and must be differentiated from it by the pathologist. In favor of thrombo-angiitis obliterans or Mönckeberg's sclerosis, our patient is the right age, sex, and a heavy cigarette smoker. Just how important a rôle tobacco plays in the etiology of Buerger's disease is still a disputed point. but it is certainly true that a large proportion of the sufferers from this disease are heavy smokers. On the other hand it should be pointed out that many of these patients greatly increase their consumption of tobacco when gangrene or ulceration of the feet forces them to stop work and sit around the house in a state of constant discomfort and inability to work or sleep. The fact that he is not of Hebraic extraction is not important, as the malady crops up in many other racial stocks, frequently in the French. It is significant that he has no palpable arteries in the good left foot. The fact that this foot is warm and that there is no history of intermittent claudication in either leg or of the right foot having felt cold before the onset of the gangrene does not rule out thrombo-angiitis obliterans. Many patients are unaware that they have the disease until incidental and often minor trauma or sepsis precipitates a sudden ulceration or gangrene. This may follow simple cutting of a toe nail or a small blister from a tight shoe.

On the other hand sepsis alone could cause a similar picture. Fourteen weeks ago this patient broke his toe. He then gives the history of a splint that hurt, possibly because it was too tight. It was allowed to remain unchanged for four weeks. In the meantime infection set in, resulting in a vicious circle, as the small terminal arteries of the foot became thrombosed and the gangrene extended.

The important point in the physical examination and the one which demands immediate treatment is the tenderness in the ball of the foot—a sure sign that the sepsis in the toes has followed the usual line of extension along the flexor tendons and has involved the plantar fascia. The observations that the foot is colder than the left, that it blanches quickly, and that the color returns slowly are all signs of a poor collateral circulation along with the obliteration of the main vessels.

In making our pre-operative diagnosis in the

presence of this local infection we must be on our guard. I do not think we are justified in being more specific than calling it a septic gangrene with a strong possibility of thrombo-angiitis obliterans as the predisposing factor. The future examination of the foot, when the infection has entirely subsided, alone can show whether the vessels of the foot are normal or whether they have been permanently obliterated by a thrombo-angiitis of insidious onset.

FIRST OPERATION

December 3 the second toe of the right foot was amputated under spinal anesthesia. Besides removing the gangrenous toe, it was necessary to drain the necrotic tendons and plantar fascia. As incisions on the sole of the foot are unsatisfactory (they cannot be adequately Dakinized and produce a poor weight-bearing scar), the cut was made on the dorsum (Plate I), and

CASE 15132, PLATE I. Incision for exposure and alcohol block of anterior tibial and medial cutaneous branch of peroneal nerves. The lateral cutaneous branch (not injected) supplies the remainder of the dorsum of the foot as far as the fifth toe. The anterior tibial supplies the proximal lateral surface of the great toe and the area of the drainage wound.

the distal two-thirds of the third metatarsal and the head of the second were resected. (Plate II.)

PATHOLOGIC REPORT

Microscopic examination of the amputated toe shows extensive necrosis of the soft tissue with a zone of acute inflammatory reaction. The remainder of the tissue shows moderate chronic inflammatory infiltration. Many of the small blood vessels show marked intimal proliferation, producing obliteration of the lumen in some of them. In the presence of the marked inflammatory process, however, it is impossible to say whether the changes in the vessels are primary or secondary.

Thrombo-angiitis obliterans?

FURTHER DISCUSSION

The patient now had adequate drainage; the dorsal incision, with the necrotic tendons and plantar fascia at its base, formed a wide open gutter which was kept constantly flooded with Dakin's solution. His general resistance, however, was low on account of constant pain and

CASE 15132, PLATE II. X-ray taken immediately after first operation to show method of resecting metatarsals after amputation of toes to secure drainage of infected plantar fascia and flexor tendons through dorsum of foot.

loss of sleep. He was also beginning to acquire a taste for morphia, and it was impossible to do satisfactory local dressings and cut away the sloughs as they separated under the Dakin's régime.

This was the reason for the second operation, an alcohol injection of the sensory nerves to the painful part of the foot. The first procedure of this kind to my knowledge was performed here in a similar case by Dr. Smithwick several months ago.

SECOND OPERATION

December 17 alcohol injection of the anterior and posterior tibial nerves and the lateral cutaneous branch of the peroneal nerve was done.

Under local novocain through a vertical incision six inches above the ankle and midway between the tibia and the fibula the medial cutaneous branch of the peroneal nerve was exposed over the crest of the fibula where it penetrates the fascia. It was injected with one cubic centimeter of 95 per cent alcohol. The anterior tibial nerve was then exposed lying deep between the tibialis anterior and the extensor hallucis longus muscles. It was injected with two cubic centimeters of 95 per cent alcohol. Through an incision at the posterior border of the tibia the posterior tibial nerve was picked up, lying next to the posterior tibial artery in the cleavage plane between the flexor digitorum communis and the soleus muscles. It was injected with three cubic centimeters of alcohol. Neither the anterior nor the posterior tibial artery showed any pulsation, but there was a good collateral circulation in the skin and subcutaneous tissue. The incisions were closed without drainage.

Further History

After the operation the patient had anesthesia of the entire sole and of the dorsum of the foot as shown in Plate I. During the following nights he slept without medication and felt greatly relieved. Frequent Dakin's dressings and cutting away of dead tissue could now be performed without pain. A culture from the wound showed staphylococcus aureus. By December 24 the wound looked well and clean. He was given Buerger's exercises and foot exercises. Special shoes were prescribed by the Orthopedic Department with a pad to fill in the space of the amputated toes to prevent hallux valgus. January 8 a wound culture showed staphylococcus aureus. January 25 a swab showed diphtheroids. At discharge January 31 the wound was practicaly healed and he walked about the ward four minutes every hour.

At a visit to the Out-Patient Department February 2 there was sensation on the dorsum of the foot as far as the proximal end of the scar.

February 23 the lateral cutaneous branch of the peroneal nerve and the anterior tibial nerve had entirely regenerated. The posterior tibial gave sensation to the ball of the foot. The patient's incision was healed and he walked without any trace of a limp. The color and temperature of the foot were restored to normal, but the dorsalis pedis and posterior tibial arteries were permanently obliterated.

Further Discussion

The diagnosis is therefore thrombo-angiitis obliterans—an early case with a well developed collateral circulation, but obliteration of the anterior and posterior and anterior tibial arteries in the lower leg where they were observed and palpated in the second operation. With such a good collateral circulation there would have been but slight chance of gangrene without the superimposed handicap of sepsis.

It seemed to all of us who followed this patient that his leg was saved by the injection of the sensory nerves with alcohol. Following this procedure complete Dakinization of the septic area and cutting away of sloughing necrotic fascia and tendons could be carried out without pain. He required no further medication and slept well every night. He could carry out Buerger's exercises to increase the circulation. This had previously been impossible on account of pain. In a very few days the edema and coldness of the foot disappeared and the wound edges sprouted healthy granulations.

As regards this operation, it is to be noted that when the anterior and posterior tibial nerves are blocked in the lower third of the leg, no important muscular branches are sacrificed. Only the small intrinsic muscles of the feet are temporarily paralyzed. With this small degree of temporary paralysis the patient was able to walk with a barely perceptible limp. This has now entirely disappeared. The anesthesia of the distal half of the foot lasted for six weeks; at the end of two months it was almost gone.

Smithwick and I* have now performed alcohol injections of the various nerves in the lower leg six times to desensitize painful, ulcerated and gangrenous feet. We feel that we can produce complete anesthesia of the whole lower leg below the knee if necessary without sacrificing any important motor branches. In this short series four cases have gone on to healing with relief of their pain, while two have progressed painlessly to more extensive gangrene and amputation. In no case has the operation brought about a direct increase in the area of gangrene, and in only a single instance has the operative incision failed to heal by first intention.

DIAGNOSIS

Thrombo-angiitis obliterans.

*This series is to be reported soon in detail, with a description of the operative technique for exposing and injecting the sensory nerves in the lower leg.

The New England
Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY under the jurisdiction of the

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SUBSCRIPTION TERMS: *$6.00 per year in advance, postage paid for the United States, Canada $7.05 per year, $7.56 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 126 Massachusetts Avenue.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The New England Journal of Medicine, 126 Massachusetts Avenue, Boston, Mass.

MEDICINE AND THE LAW

THE *Bulletin of the Academy of Medicine* of Cleveland, in an editorial entitled "Medico-Legal Co-öperation", calls for a closer relationship and more co-öperative effort between the medical and legal professions. The Academy of Medicine and The Cleveland Bar Association, in fact, accomplished one satisfactory piece of co-öperative work two years ago by a joint committee acting on the matter of expert testimony. Recommendations made as a result of this effort were approved by state and national organizations of both professions, and promise of greater results is made by the appointment by the Council of the Academy of a committee of three to confer with the Cleveland Bar Association on matters of common interest. The Bar Association, by the way, is now studying the problem of ambulance chasing, and plans to enlist, in this investigation, the services of the Supreme Court of Ohio.

The possibilities of abuse in the contacts between medicine and the law are many and are all too well known, and by and large, they depend on the personal equation. The pity is that so little is done about them. Both professions include among their numbers individuals of small calibre and little integrity, despite occasional house cleaning efforts on the part of both Bar Association and State Medical Society. The ex parte witness as opposed to the system of court appointed expert leads obviously to miscarriage of justice and may often prove a reflection upon the profession as a whole. In this State we have been plagued particularly with a burden of malpractice suits, for the most part groundless, largely instigated by unscrupulous lawyers, abetted by grossly negligent or no less unscrupulous physicians.

We are too hesitant in dealing with these problems. Our profession needs a vigorous house cleaning, and it would be to the credit of the Society to instigate it. The Bar Association itself is trying to keep its membership clean. A co-öperative effort between the two might be far more effective than any individual effort on the part of either and should go far in abolishing some of the evils that have sprung up among us.

THE CHILDREN'S HOSPITAL CONTAGIOUS UNIT

IT must be a source of great satisfaction to the trustees of the Children's Hospital, with the original goal of their building fund in sight, as it is a tremendous boon to the practicing medical profession as a whole, to have added to the improvements already decided upon, the promise of a contagious disease unit. The news of this new and valuable departure was given out at the committee dinner on March 11, with the announcement of a gift of $100,000 for this purpose alone, the original gift to be doubled in size by contributions from the community. The final sum will be attained without question, and the aim of the hospital to care for all the diseases of children will be reached.

The importance of this step will be appreciated by all. It is brought out in Dr. Blackfan's statement of this need, where he points out that there is a limited space at the City Hospital for the indigent poor, but no space available anywhere for the children of those in comfortable circumstances, or the well-to-do. With modern living arrangements in apartments there is not room to care properly at home for a child suffering from contagious disease. Even if the child can be cared for at home, after complications sometimes arise, such as mastoiditis after scarlet fever or measles. In this event there is literally no place to which the child can be sent for the delicate operation and treatment needed. Facilities for intubation and tracheotomy after diphtheria cannot be arranged in the home either.

Each one of us has been involved in the complications arising out of the contagious disease case occurring in the home. Often, in the small apartment, the proper quarantining of patients presents almost insuperable obstacles. A contagious unit as part of a general hospital for

children will help greatly to relieve these situations. Improved facilities, moreover, will be available for the instruction of medical students and house officers and the training of nurses in contagious disease cases. The study of the problems of contagious diseases will be facilitated. The new ward seems to us the most important forward step that the Children's Hospital has taken in years.

CHIROPRACTIC LEGISLATION

THE Committee on State Administration has unanimously reported a re-drafted Chiropractic bill, Senate 304, which is printed in full in another column.*

This would provide for the appointment of two chiropractors at a salary of $150.00 each to assist the Board of Registration in Medicine in the examination of those applying for the right to practice chiropractic, which is defined as "the external treatment of the human spine by mechanical or manual means".

Applicants must be graduates of a reputable chiropractic school which is defined as one giving "a course of at least twenty-two hundred sixty-minute daylight hours to matriculants possessing the educational qualifications required for graduation from a public high school".

Upon payment of a fee of $25.00 the Board of Registration in Medicine shall examine the applicant in "the subjects of anatomy, physiology, symptomatology, hygiene, sanitation, physiological chemistry, histology, pathology, chiropractic analysis and the principles and practice of chiropractic as taught in reputable chiropractic schools". If found qualified the Board shall register the applicant as a Chiropractor. Those so registered "shall not be permitted to prescribe or administer drugs for internal use, or to perform major operations in surgery, or to engage in the practice of obstetrics or to hold themselves out, by virtue of such registration, as and for other than chiropractors".

Any person holding a license or certificate issued by a chiropractic board of any other state maintaining standards at least equal to those of this commonwealth may, after a written examination, be registered by the board upon payment of a fee of twenty-five dollars, "the production of his diploma, license, and evidence of good character".

"Any person who has been a resident of this commonwealth for at least two years prior to July 1st, 1929, and who presents to the board within six months after the effective date of this act satisfactory evidence that he is twenty-one or over and of good moral character and that prior to the July 1st, 1924 he personally attended, was graduated from, and now holds a diploma from, a legally chartered chiropractic school ——— shall upon the payment of ten dollars be registered as a Chiropractor".

*Page 678.

These are the essentials of the bill, which is drafted more or less along the lines of the act regulating Chiropodists.

Except for the first six letters in their names Chiropodists bear no resemblance whatever to Chiropractors. The former confine their activities to the simple treatment of a limited number of conditions of the feet. Except for the recognition of conditions due to arterial changes and diabetes no knowledge of medicine is required. Very properly the regulation of chiropodists may be placed under the Board of Registration. Chiropractors on the other hand undertake to diagnose and treat all diseases to which flesh is heir. The sole limitations placed upon them are that they are not to use drugs, or practice major surgery or obstetrics.

There appears to be in this bill a total failure to appreciate what is meant by the single standard recommended a few years ago by the Recess Committee of the Legislature and endorsed year after year by the medical and the osteopathic societies. To place the special examination of chiropractors under the Board of Registration in Medicine is in no sense whatever to maintain a single standard. All who now practice the healing art are required to have devoted four years of thirty-six weeks each to fitting themselves to practice before they can be examined. The time and the subjects are fixed not by the Board but by the Legislature. The Committee now reports a bill which would permit chiropractors to treat all diseases after study of fifty weeks of five and a half eight hour days. It is difficult to understand how the committee can feel justified in recommending that the Legislature grant to chiropractors the right to practice the healing art after studying for one year while the Legislature compels all others to devote four years to their preparation. The elimination of the use of drugs and of surgery deprives the public from receiving the benefits of methods of the utmost value in proper cases.

It might seem that the proposal to grant these special privileges was enough. It is not. A measure of reciprocity with other states allows less stringent examination. But more special privileges are proposed. Residents of Massachusetts who make affidavit that they hold a diploma in chiropractic from a legally chartered school received before July 1st, 1924 are to be registered on payment of $10.00 with no examination whatever. In other words any resident holding such a diploma whether for a correspondence course or a night school course of six weeks or less, is authorized to assume all the heavy diagnostic responsibilities of medical practice, with the duties involved in deciding as to quarantine, surgical aid, etc., and to determine when and where chiropractic manipulation is a safe course to follow.

This is the situation. Those intensely interested in securing special privileges have secured a unanimous report from a legislative commit-

tee. The passage or the defeat of this measure rests with the Legislature. Unless a majority of the members of Senate or House are convinced that the bill is a betrayal of the public for the benefit of those seeking special favors the bill will be enacted. Those who have promised to vote against the original bill may not feel bound to vote against the redraft.

THE AMERICAN COLLEGE OF PHYSICIANS

DURING the second week in April (8th to 12th inclusive) the American College of Physicians will hold its thirteenth Annual Clinical Session in Boston. The primary objects for which this organization was founded are the elevation of the ideals and standards of the practice of internal medicine throughout the continent, and the dissemination of clinical and scientific knowledge among its members. Its annual session, therefore, is essentially a movement in the graduate education of the physician. For that reason the program that has been drawn up by the Committee on Arrangements, following the custom of the College, is divided about equally into clinical and scientific sessions. The former have been planned by the medical staffs of a large number of Boston's hospitals and will be held each morning while the meeting lasts. In the afternoons and on three of the evenings papers on clinical and scientific subjects will be presented to the whole College at the Hotel Statler.

The clinics, naturally, are conducted largely by the local profession, although some of the hospitals have invited certain distinguished physicians from elsewhere to take part. The afternoon and evening programs, however, are made up chiefly of contributions by Fellows of the College and guests from other parts of the United States and from Canada. Both clinical and scientific programs are quite diverse, covering most of the important aspects of the diagnosis and treatment of internal disease. The actual care of the individual patient is the point chiefly to be stressed. The management of functional nervous disorders will be given some prominence, and the practitioner's duty regarding the prevention of disease will receive emphasis.

Among items of especial interest on the program may be mentioned a symposium on deficiencies, a lecture on serums and vaccines in the prophylaxis and treatment of disease, and a demonstration of the pathogenicity of human amebiasis.

The College now numbers over two thousand members and it is expected that well over one thousand will register at the Boston meeting. This meeting should be both instructive, because of the wealth of clinical and scientific opportunity that Boston's medical schools and many hospitals affords, and pleasant, because of the many points of general interest which Boston presents.

The College of Physicians encourages and promotes what is best in the practice of internal medicine, and in serving this function deserves the support of the profession at large.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

VIETS, HENRY R.; B.S., M.D. Harvard, 1916. Instructor in Neurology, Harvard Medical School. Assistant Neurologist, Massachusetts General Hospital. Visiting Neurologist, Long Island Hospital. Address: 6 Commonwealth Avenue, Boston. Associated with him is:

WATTS, JAMES W.; B.S., M.D. University of Virginia, 1928. Neuro-Surgical House Officer, Massachusetts General Hospital. Their subject is: "Three Cases of Aseptic (Lymphocitie) Meningitis." Page 633. Address: Massachusetts General Hospital, Boston.

WILDER, T. S.; B.A., B.Sc., M.D. Western Reserve, 1924. Research Fellow and Assistant in Pediatrics, Harvard Medical School, 1926 to 1928. Instructor in Pediatrics, University of Pennsylvania Medical School, 1929. His subject is: "The Under-Nourished Child: Analysis of Results of Convalescent Care." Page 634. Address: 319 W. Penn Street, Germantown, Philadelphia, Pa.

BOCK, A. V.; A.B., M.D. Harvard, 1915. Physician, Massachusetts General Hospital. Assistant Professor of Medicine, Harvard Medical School. His subject is: "On Some Aspects of the Physiology of Muscular Exercise." Page 638. Address: Massachusetts General Hospital, Boston.

CROSSMAN, E. A.; Doctor of Veterinary Medicine, M.D.V. Harvard, 1891. Inspector in Charge, Tuberculosis Eradication, New Hampshire, Massachusetts and Rhode Island, United States Department of Agriculture, Bureau of Animal Industry. His subject is: "Proper Standards for the Production and Shipment of Milk." Page 660. Address: 2001 Custom House, Boston.

The Massachusetts Medical Society

A MATTER OF CONCERN TO THE FELLOWS

A LETTER signed by President John M. Birnie, Secretary Walter L. Burrage, Treasurer Arthur K. Stone and W. P. Bowers of the JOURNAL has been sent to every Fellow of the Society this week. If this letter has not been read, we suggest careful examination of its contents because it is intended to present an explanation of the purpose of the Society to secure adequate headquarters.

This information has been more or less generally disseminated but it is quite well recognized that the exacting duties of a physician's life prevent concentration on much material which reaches him. Every day a deluge of letters, circulars and appeals comes to a doctor's office and in justice to himself much has to be disregarded.

This particular letter is designed to acquaint the Fellows of the Society again with the important facts now calling for action.

The JOURNAL will undertake to answer questions relating to this plan if there is doubt in the mind of any Fellow of the Society as to the reasons which have led the President to advocate this campaign.

SECTION OF OBSTETRICS AND GYNECOLOGY

Frederick L. Good, M.D., *Chairman* Louis E. Phaneuf, M.D., *Secretary*
Frederick J. Lynch, M.D., *Clerk*

Will you please discuss the use of Anesthesia in Obstetrics?

The problem of diminishing or arresting pain during childbirth is one which has commanded the interest of the profession since the earliest times. At first some forms of alcohol chloroform and ether were resorted to, but these could only be used in advanced labor, during the second stage, and nothing was done for the long first stage which is so wearing, especially to the primipara.

In about 1906 morphine scopolamine narcosis was tried. In the early attempts several doses of morphine were given with the result that many asphyxiated babies were born. In 1914 this technique was refined at Freiburg and only the initial dose of morphine sulphate, grain 1/6 was given; the scopolamine hydrobromide in doses of 1/200 grain was repeated up to the point of amnesia. The method was tried in most American obstetric clinics, but was soon given up as a routine measure because of the danger to the baby.

What requirements are essential to an anesthetic agent in obstetrics? First, the agent must be safe for the mother and child; second, it must be capable of diminishing pain without arresting labor, and third, its method of administration must be simple so that it can be used in the home as well as in the obstetric clinic.

We divide anesthesia in obstetrics into first stage anesthesia and second stage anesthesia.

FIRST STAGE ANESTHESIA. At the beginning of the first stage, especially with the primipara, analgesia may be begun by the administration of a barbital preparation. Ipral, in a 2 grain dose, is a good preparation since it causes but little depression. When labor is well established, with regular contractions, and the cervix about two fingers dilated, morphine sulphate, grain 1/6, and scopolamine hydrobromide, grain 1/150 are administered subcutaneously. The scopolamine hydrobromide may be repeated once or twice in doses of grain 1/200 if the first stage is prolonged; the morphine is not repeated. This usually carries the parturient to the second stage with a fair degree of comfort.

Instead of the above, one may use morphine sulphate, grain 1/6 early in labor, followed by 20 or 30 grains of chloral hydrate administered rectally.

SECOND STAGE ANESTHESIA. During the second stage gas and oxygen may be administered with each pain. Ethylene has been recommended for the same purpose but has never gained much vogue because of its explosive properties. The actual delivery, whether normal or operative, is best carried out under ether anesthesia as is the repair of the perineum when necessary.

GWATHMEY'S SYNERGISTIC ANESTHESIA. With labor well established and pains coming at five-minute intervals and lasting forty seconds, a cleansing soapsuds enema is given. An intramuscular injection of 1/6 or 1/4 grain of morphine, depending upon the weight of the patient, and 2 c.c. of 50 per cent. solution of magnesium sulphate is given deep into the gluteal region. Morphine sulphate, grain 1/4 is usually the proper dose, but in a small woman 1/6 grain is sufficient. Twenty minutes after the first injection a second injection of 2 c.c. of 50 per cent. magnesium sulphate is administered whether the effect of the primary injection is sedative or not as it tends to prolong the effect of the morphine. When the sedative effect of the morphine magnesium sulphate begins to wear off, usually in one to three hours, and when the parturient is about three fingers dilated, the ether rectal instillation is given through a suitable apparatus. The apparatus consists of a four ounce funnel attached to a twenty inch length of rubber tubing, which is in turn connected by a glass connecting tip to a red rubber catheter, size 20 or 22, French. The rectal ether mixture has the following formula:

Quinine alkaloid,	20 grains
Alcohol	40 minims
Ether	2 1/2 ounces
Olive Oil, enough to make	4 ounces

This rectal mixture should be preceded and followed by an ounce of warm olive oil. A third injection of 2 c.c. of 50 per cent. magnesium sulphate is now given to prolong the action of the ether. The patient now is drowsy and sleeps lightly between pains, but consciousness is not entirely lost.

The rectal mixture may have to be repeated once or twice, at three hour intervals, the mixture is the same except that in the repeated doses 10 grains of quinine alkaloid is used instead of 20 grains. Each repeated dose should be fol-

lowed by the injection of 2 c.c. of 50 per cent. magnesium sulphate.

A minimum of inhalation ether is needed for the delivery; gas, if desired, is safe, but chloroform should never be used. A labor so conducted is practically painless. Harrar of the New York Lying-In Hospital has reported 5800 such anesthesias without danger to the mother and child.

Recently, articles have appeared in the literature recommending spinal anesthesia in obstetrics; the subject can be dismissed by stating that it is too dangerous a method to use in the ordinary case of labor.

Local infiltration anesthesia and parasacral anesthesia, while safe, demand too exacting a technique to make them available in places other than the well equipped Maternity Service.

Chloroform had a great deal of vogue some years ago. The dangers of this form of narcosis have been responsible for its elimination from obstetrics as well as from surgery.

Questions of a similar nature to the above will be discussed in the JOURNAL each week until June. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

MASSACHUSETTS LEGISLATIVE NOTES

THE CHIROPRACTIC BILL

Senate—No. 304

The Commonwealth of Massachusetts

Senate, March 20, 1929.

The committee on State Administration, to whom was referred the petition (with accompanying bill, Senate, No. 225) of G. Ernest Spear and others for the establishment of a board of examination and registration to regulate the practice of chiropractic, report the accompanying bill (Senate, No. 304).

For the committee,
WALTER PERHAM.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Twenty-Nine.

An Act to regulate the Practice of Chiropractic.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Chapter thirteen of the General Laws is hereby amended by inserting after section twelve the following new section:—

Section 12A. The board, in the examination of applicants for registration as chiropractors, shall have the assistance of two chiropractors who shall have personally attended and graduated, at least five years prior to their appointment, from a legally chartered chiropractic school, college or university having the power to grant degrees in chiropractic and who shall have been residents of the commonwealth for at least three years. They shall act under the direction of the board and shall each receive, in full compensation for his services, one hundred and fifty dollars annually. The members of the board who shall be designed by the board to act in the examination of such applicants shall each receive for such services one hundred dollars annually; and such members and the two chiropractors assisting them shall be allowed for their traveling expenses necessarily incurred in the performance of their duties such sums as may be approved by the governor and council.

SECTION 2. Chapter one hundred and twelve of the General Laws is hereby amended by inserting after section twenty-three, under the caption, REGISTRATION OF CHIROPRACTORS, the following twelve new sections:—

Section 23A. "Chiropractic", as used in this chapter, shall mean the external treatment of the human spine by mechanical or manual means. This and the eleven following sections shall not apply to surgeons of the United States army, navy or of the marine hospital service, nor to physicians registered in the commonwealth.

Section 23B. No person shall practice or attempt to practice chiropractic in the commonwealth, or hold himself out as a chiropractor, or designate himself, or describe his occupation, by the use of any words or letters calculated to lead others to believe that he is a registered chiropractor, unless he is registered as provided in section twenty-three D.

Section 23C. The board shall prepare and distribute forms of applications for registration, certificates of registration and such other documents as may be necessary or convenient in carrying out sections twenty-three A to twenty-three L, inclusive. It shall hold at least two examinations annually, at times and places to be designated by it.

Section 23D. Applications for registration as chiropractors, signed and sworn to by the applicants, shall be made upon blanks furnished by the board. If an applicant furnishes the board with satisfactory proof that he is twenty-one or over and of good moral character, and that he has been graduated from a reputable chiropractic school, college or university, as defined in the following section, he shall, upon the payment of twenty-five dollars, be examined by the board as provided in section twenty-three G, and, if found qualified, shall be registered as a chiropractor and receive a certificate as a registered chiropractor, signed by the chairman and secretary of the board. Said certificate shall entitle its holder to practice chiropractic in this commonwealth and shall designate him as a chiropractor and shall be publicly displayed at his principal place of business so long as he shall continue to practice chiropractic. An applicant failing to pass an examination satisfactory to the board shall, within one year thereafter, if not disqualified under section twenty-three F, be entitled to a re-examination at a meeting of the board for the examination of applicants upon payment of a further fee of three dollars; but two such re-examinations shall exhaust his privilege under his original application. Every such certificate shall expire on the last day of the year when it was granted, but upon the payment of two dollars shall be renewed by the board for each subsequent year without examination. Persons registered hereunder shall not be permitted to prescribe or administer drugs for internal use, or to perform major opera-

tions in surgery, or to engage in the practice of obstetrics or to hold themselves out, by virtue of such registration, as and for other than chiropractors.

Section 23E. A chiropractic school, college or university shall be considered reputable if it posesses the following qualifications:—First, it shall be incorporated and authorized by its charter to confer the degree of doctor of chiropractic; Second, it shall give a course of at least twenty-two hundred sixty-minute daylight hours to matriculants possessing the educational qualifications required for graduation from a public high school; Third, it shall confer such degree only after personal attendance of the applicant therefor at such course, and upon successful completion thereof.

Section 23F. The board shall refuse to issue a certificate to, or, after hearing, may revoke any certificate issued by it to, and cancel the registration of, any chiropractor convicted of a felony; and shall refuse to issue a certificate to, or, after hearing, may revoke any certificate issued by it to, and suspend, for a period not exceeding one year, the certificate of, any chiropractor who has been guilty of gross and confirmed use of alcohol in any of its forms while engaged in the practice of his profession or of the use of narcotic drugs; or of publishing or causing to be published or of distributing or causing to be distributed any literature contrary to section twenty-nine of chapter two hundred and seventy-two; or of acting as principal or assistant in carrying on the practice of chiropractic by an unregistered person or by any person convicted of the illegal practice of chiropractic or by any registered chiropractor whose license has been revoked either permanently or temporarily; or of aiding or abetting in any attempt to secure registration, either for himself or for another by fraud; or, in connection with his practice, of defrauding or attempting to defraud any person. The board may subsequently, but not earlier than one year thereafter, reissue any certificate formerly issued by it or issue a new certificate and register anew any chiropractor whose certificate was revoked and whose registration was cancelled.

Section 23G. The board shall examine each applicant as to his qualifications for the practice of chiropractic. Such examination shall be wholly or in part in writing, in the English language, shall be of a scientific and practical character, and shall include the subjects of anatomy, physiology, symptomatology, hygiene, sanitation, physiological chemistry, histology, pathology, chiropractic analysis and the principles and practice of chiropractic as taught in reputable chiropractic schools, colleges and universities and shall include practical demonstrations, and shall be sufficiently thorough to test the applicant's fitness to practice chiropractic.

Section 23H. Except as provided in section sixty-five, whoever, not being lawfully authorized to practice chiropractic within the commonwealth and registered under section twenty-three D, holds himself out as a practitioner of chiropractic, or uses any of the titles, words, or letters "chiropractic", "chiropractic practitioner", "doctor of chiropractic", "D.C.", or any other title or letters, either alone or with qualifying words or phrases in such manner, or under such circumstances, as to indicate that he is engaged in the practice of chiropractic, or whoever practices or attempts to practice chiropractic in any of its branches, or whoever practices chiropractic under a false or assumed name or under a name other than by which he is registered, or whoever personates another practitioner, or whoever practices or attempts to practice any fraud in connecion with the filing of an application, or whoever files an application under a false or assumed name, or under any other than his own, or whoever personates or attempts to personate another applicant for registration during an examination, shall be punished by a fine not less than one hundred nor more than one thousand dollars or by imprisonment of not less than one month nor more than one year, or both. A person rendering chiropractic service in violation of this section shall receive no compensation therefor.

Section 23I. Any person holding a license or certificate issued by a chiropractic board of any other state maintaining standards at least equal to those of this commonwealth may, after a written examination, be registered by the board upon payment of a fee of twenty-five dollars and the production to the board of his diploma, the certificate or license issued in such other state and satisfactory evidence of good moral character.

Section 23J. Every person registered under section twenty-three D shall, before entering upon the practice of chiropractic, submit his certificate of registration to the clerk of the town where he proposes to practice, and shall inform the clerk that he is the person designated therein, and shall pay him fifty cents. Thereupon, the clerk shall record the name and address of such person and the date and number of his certificate, and the said record shall be open to public inspection, and the clerk shall furnish a copy thereof to the board within one week.

Section 23K. Whoever obtains or attempts to obtain registration under section twenty-three D by any fraudulent means, or violates any provision of section twenty-three B, shall, except as provided in section sixty-five, be punished by a fine of not less than one hundred nor more than five hundred dollars or by imprisonment for not less than three months or more than one year, or both. Whoever violates any provision of the preceding section shall be punished by a fine of not less than three nor more than twenty dollars.

Section 23L. All necessary expenses incurred in carrying out the provisions of the eleven preceding sections and in investigating complaints for violation thereof shall be paid by the commonwealth, but they shall not in any year exceed the amount received by the commonwealth for fees under said sections during that year.

Section 3. Any person who has been a resident of this commonwealth for at least two years prior to the first day of July, nineteen hundred and twenty-nine, and who presents to the board within six months after the effective date of this act satisfactory evidence that he is twenty-one years of age or over and of good moral character and that prior to the first day of July, nineteen hundred and twenty-four, he personally attended, was graduated from, and now holds a diploma from, a legally chartered chiropractic school, college or university having the power to confer degrees in chiropractic, which facts shall be set forth in an affidavit, shall, upon application on a blank furnished by said board, signed and sworn to by the applicant, and upon the payment of a fee of ten dollars, be registered as a chiroprac-

tor under the provisions of sections twenty-three A to twenty-three L, inclusive, of chapter one hundred and twelve of the General Laws.

MISCELLANY

THE GRADUATE COURSE IN CANCER

In Massachusetts cancer has been recognized as a public health problem and the Health Department instructed by the legislature to take steps for the study and control of the disease. The State Cancer Hospital at Pondville is now well known. There are also seventeen diagnostic consultation clinics in various centers in the State, staffed by the physicians in the localities.

A great deal has been done in recent years to educate the public in regard to the disease, and two conferences of physicians in charge of the cancer clinics have been held at Pondville. There has now been arranged a three-day intensive graduate course on cancer at the larger Boston hospitals on April 23, 24 and 25 under the direction of the Massachusetts Medical Society in conjunction with the State Department of Public Health. There has been a distinct demand for such a course from the men in charge of the local cancer clinics, as well as from general practitioners who wish to keep abreast of the times in the latest methods in diagnosis and treatment of the disease. This course will be open to all the physicians of the State. It will consist of lectures on the early symptoms and diagnoses of the more common forms of cancer, and demonstrations of the best methods of treatment. The exercises will be held in the morning and afternoon, the evenings being reserved for general meetings. It is planned to devote one evening to a dinner at which it is expected the Governor will be among the speakers.

A nominal registration fee will be charged for the course, and the numbers will be strictly limited to the capacity of the hospitals. A similar course was offered in Philadelphia a year ago which proved to be very successful and which was attended by 135 men. Similar intensive courses, such as the Fracture Course offered recently at the Massachusetts General Hospital, has proved very popular, and it is expected that many physicians will avail themselves of the opportunity to attend the Cancer Course.

(Signed) COMMITTEE ON A GRADUATE COURSE IN CANCER.

MEDICAL PRACTICE AND PREVENTIVE MEDICINE

Dr. Theobald Smith, the pathologist, in an address at the Health Conference now in session in New York, discussed the delicate subject of the attitude of medical practitioners toward organizations interested in preventive medicine. At the beginning of what he calls the "bacteriological era," the two were seemingly facing each other as competitors. Gradually, however, they have been drawn together by the force of truth which has come to both as the result of research. Yet there is still a difference in emphasis, as is clearly set forth in the following characterization of the two:

The organization devoted to problems of infectious diseases have seen only the microbe. The physician has seen the effects of heredity and special constitution in the variations between individual members of the same family in many reactions toward disease. He had been clinging to heredity in tuberculosis until dislodged by the bacillus, and now he is returning again to a modified view of heredity, with the bacillus in full view, however. Preventive medicine looks with dismay on healthy carriers, but the physician may regard them as normal. On the other hand, the physician realizes that there will always be disease, either of one kind or another, whereas the public health worker has dreams of completely suppressing infectious diseases.

Furthermore, public health agencies are concerned with mass phenomena and record their progress by statistics, whereas the physician deals with the individual and is not helped by the fact that 95 per cent. of the operations for a particular ill are successful. That does not tell him whether the case in hand belongs to the 95 per cent. or the 5 per cent. Experiment assumes a certain uniformity, while practice has to contend with complications. The conclusion is that each needs the other as a corrective and that they must work together. They are the "two wings of medicine," and each is essential to the other in functioning for the community good. Not only must the accidents and infirmities of the moment be looked after, but there must be a peering ahead to avoid what is approaching.

It is more difficult to appraise the value of preventive work. Averting an epidemic by discovering infection in water, for example, does not receive the attention that is given the saving of a single life by surgery or by medical treatment and care. And yet, as Dr. Smith adds, the casualties and catastrophes that do not happen because of such preventive activities "would make fairy stories ordinary reading." To anticipate and so to control the immediate future is "the highest achievement of civilized society." And the treatment of disease is gradually losing its "character of emergency," and is employing the element of time and the recuperative power of tissues. For the great army of public health the physician must be "the outpost." This conference of the medical practitioners and the workers in the public health organizations is a hopeful symptom, for both are essential to the community.—*N. Y. Times.*

RÉSUMÉ OF COMMUNICABLE DISEASES FOR MASSACHUSETTS, JANUARY, 1929

GENERAL PREVALENCE

The total reported incidence of communicable diseases for January was very high. This unusual incidence was due principally to the high incidence of influenza. This disease computed about forty-five per cent. of the total cases reported for the month. More cases of influenza were reported than in any previous January since 1919.

A new high January record was reported for lobar pneumonia.

The reported incidence of chickenpox was high.

The reported incidence of scarlet fever, measles, whooping cough, diphtheria, pulmonary tuberculosis, syphilis and gonorrhea was within endemic limits.

Fewer cases of typhoid fever were reported in January, 1929, than in any previous month in the history of the Department. The previous low record

for January was twenty-seven cases, as compared with nine cases for January, 1929.

Fewer cases of non-pulmonary tuberculosis were reported this January than in any previous January. The previous low January record was in 1919.

The reported incidence of mumps and German measles was low, and that of anterior poliomyelitis very low.

RARE DISEASES

Anterior poliomyelitis was reported from Adams, 1; Fitchburg, 1; New Bedford, 1; Sutton, 1; total, 4.

Anthrax was reported from Haverhill, 1; Lynn, 1; total, 2.

Encephalitis lethargica was reported from Andover, 1; Boston, 2; Brookline, 1; Cambridge, 1; Marlboro, 1; Northampton, 1; Salem, 1; Worcester, 1; total, 9.

Epidemic cerebrospinal meningitis was reported from Beverly, 1; Boston, 3; Cambridge, 2; Lawrence, 1; New Bedford, 2; Springfield, 1; total, 10.

Leprosy was reported from Boston, 1; total, 1.

Malaria was reported from Arlington, 1; Foxboro, 1; total, 2.

Septic sore throat was reported from Amesbury, 2; Belmont, 1; Boston, 19; Danvers, 1; Fall River, 2; Fitchburg, 1; Lexington, 1; Lynn, 1; Revere, 1; Saugus, 1; Springfield, 2; Williamstown, 6; Worcester, 1; total, 39.

Smallpox was reported from Gardner, 11; Natick, 1; Petersham, 1; Springfield, 1; total, 14.

Trachoma was reported from Boston, 3; Lynn, 1; Salem, 1; total, 5.

Trichinosis was reported from Arlington, 1; total, 1.

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES.

	Cases in Entire Population				Case Rates per 100,000 Pop.		
	Jan. 1929	Jan. 1928	Prosodemic Index	Epidemic Index	Jan. 1929	Jan. 1928	Expected Rate***
ALL CAUSES	18073	13509	-	-	412.6	312.4	-
Ant. Poliomyelitis	4	17	18*	.2**	.09	.4	.4
Diphtheria	490	485	358*	1.4**	11.2	11.2	8.2
Measles	2700	5518	2930*	.9**	61.6	127.6	66.9
Pneumonia, Lobar	1343	521	611*	2.2**	30.7	12.0	13.9
Scarlet Fever	1233	1508	1397*	.9**	28.1	34.9	31.9
Tuberculosis, Pul.	382	372	446*	.9**	8.7	8.6	10.2
Typhoid Fever	9	27	22*	.4**	.2	.6	.5
Whooping Cough	649	1271	940*	.7**	14.8	29.4	21.5
Chicken Pox	1696	1320	-	-	38.7	30.5	-
German Measles	42	104	-	-	1.0	2.4	-
Gonorrhea	396	395	-	-	9.0	9.1	-
Influenza	7994	58	-	-	182.5	1.3	-
Mumps	461	1311	-	-	10.5	30.3	-
Syphilis	136	161	-	-	3.1	3.7	-
Tuberculosis, O.F.	42	77	-	-	1.0	1.8	-

* This Index is an attempt to estimate the number of cases based on the trend during the past years which can be expected to occur, and is for the purpose of comparison, with the number of cases which actually did occur.

** This ratio expresses how prevalent the disease is compared with the index mentioned above; 1.0 indicates that the actual number of cases equals the expected number. A larger number means a greater prevalence, and a smaller number a lesser prevalence than expected. Thus, 2.0 would indicate twice the expected number of cases, and .5 half the expected number of cases. The method used to determine the indices is described in the August 18, 1927 issue of the Boston Medical and Surgical Journal.

*** Calculated from the Prosodemic Index.

MORTALITY AND MORBIDITY OF CHILDREN OF SCHOOL AGE

The number of deaths of children of school age would be "shocking" if we were not so accustomed to their daily and hourly occurrence. There is such a death every 10 minutes.

The latest statistics are those for 1925. These are for the "registration area" which at that time had an estimated population of 103,109,000 persons of all ages (about 90 per cent. of the total population) of whom 9,057,000 (or about 9 per cent.) were colored. Statistics by groups are given for children 5 to 9 years and 10 to 14 which represent fairly well the ages of the school population. While comparatively few children are in school during their fifth year and the death rate is a trifle higher than for those who have reached 6 years the figures can be considered approximately those for children 6 to 15 years of age. In the 5 to 9 years group there were about 11,027,664 children and in the 10 to 14 group 10,222,908. The deaths in the former group in 1925 were 22,513 (white, 19,488; colored, 3,025) and in the latter 18,448 (white, 15,218; colored, 3,230). The total deaths from 5 to 14 years of age was 40,961. Roughly one in every 500 children at these ages died in an average recent year in the registration area. As the registration area represented about 90 per cent. of the total population the estimated deaths at 5 to 14 years of age for the country at large would therefore be about 45,000. Many children attend school after their fifteenth year and the total enrollment for this year at school ages as determined

by the Bureau of Education was 24,650,292 so that the total number of deaths in children of school age was probably around 50,000 or about 135 for each day of the year. The deaths among colored children were relatively much higher than those for white children, being approximately 3 per 1,000; thus lowering the rate for white children to about 1.95 per 1,000 at ages 5 to 9 and to about 1.65 per 1,000 at ages 10 to 14. (There are proportionately fewer colored children at the latter ages.)

Dublin and Lotka, in 1927, estimated (on the basis of attaining an earning capacity of about $2,500 per year) the money value of a human life at 5 years as $14,156 and at 15 years $25,341. Taking a general average valuation of each child of school age at $20,000, we have (for those who desire to consider human life in dollars and cents) an annual monetary loss from deaths at school age of about $1,000,000,000. The loss in expense for schooling at $100 a year, if all who died had been in school five years, would be, in addition, $22,500,000 or at any rate sufficient to remove the "about" from the billion dollar estimate. One-tenth of this sum would suffice to furnish one physician at $4,000 and one nurse at $2,000 for every 1,500 children enrolled in our schools.—*Division of Physical Education and School Hygiene. U. S. Department of Interior.*

CORRESPONDENCE

ANNUAL REGISTRATION ACTS AND ALLIED MEDICAL LEGISLATION

February 20, 1929.

Editor, NEW ENGLAND JOURNAL OF MEDICINE,
126 Massachusetts Avenue, Boston.

Dear Editor:

Pursuant to the attached clipping*, I have taken the liberty of submitting for your careful consideration an article on Annual Registration and Allied Acts, which calls attention to some of their advantages and disadvantages.

Unfortunately, doctors, like young ladies, are great imitators of styles and fashions without many times taking into consideration that they are not becoming alike to all.

I regret that the article could not be made briefer; but on the other hand, both too little and too abstract information in these matters is both misleading and dangerous. Concrete illustrative facts have been given in the form of what, I hope, may be interpreted and construed as constructive criticism.

While I do not know your editorial policy concerning the publication of articles submitted by nonmembers of N. E. State Medical Societies, I sincerely trust that you will not reject this manuscript because it is submitted by a graduate of a "class C" medical school (which incidentally by no means proves—although it implies—that I obtained my medical education exclusively, or even mostly, at that institution). From this point of view, I hereby express my sincere thanks and appreciation for your uneditorialized publication of my recent somewhat caustic reply to Dr. Max Baff's letter.

In conclusion, I may be permitted to believe that the enclosed article is reliable and instructive information and a timely subject, and will undoubtedly much enlighten Massachusetts physicians in this important matter from various viewpoints.

However, should you, for any reason whatever, find same unavailable for publication in your journal but find it of sufficient value to use otherwise, I am only too glad to have it used in any manner you may deem it most useful for the best interests of *all* physicians. But in the latter event, I would appreciate the courtesy of learning of its disposition.

Thanking you very kindly for past courtesies, I remain

Sincerely,

CARL SCHEFFEL.

Temporary address until July 1, 1929—1350 Jefferson Ave. E. Detroit, Michigan.

Permanent address at all times—P. O. Box 2812, Miami, Florida.

*The JOURNAL earnestly hopes that the Board of Registration *and others* believing in this proposed law will present in these columns a statement of the reasons for their advocacy of the bill that the various District Societies and the Council may consider the matter carefully and if possible come to some general agreement before next year as to the best plan.

From what has already been written concerning this subject, together with the trend of unpublished discussions at the meetings of some County Medical Societies, it appears that the recently proposed Annual Registration Act has been opposed chiefly by the members of the medical profession. The result was that it was not vigorously pushed by its proponents. It seems that many physicians don't know what it is all about, so that a little information concerning similar acts may result in producing a clearer insight into the purposes of such legislation and its value to physicians and to the public.

Recently, a wave of medical legislation has been sweeping the country, some involving annual registration, and some basic science acts—of the former no cognizance need be taken now, although it shows the trend of the times along these lines.

The purpose of so-called annual registration acts is to be able to keep better check on practitioners of the healing art with the view of being thereby more readily able to detect and prosecute illegal and fraudulent practitioners. Many states have no means of accurately knowing who practices within their boundaries, and such annual registration is assumed to remedy this defect. However, it is also a fact that certain states have adopted or advocated annual registration acts for physicians, not because they were particularly needed, but rather as a convenient means of raising revenue to be used for the detection and prosecution of illegal practitioners.

Unfortunately, such acts, like all other medical legislation, greatly vary in both efficiency and enforceability in the several states in which they have been enacted. It is hoped that by citing a few of the details of one of these acts which has been deemed satisfactory and efficient, and by examining its advantages and checking its shortcomings, a clearer mental picture of the value of such legislation may be obtained.

For purposes of illustration, the writer selects the Florida Annual Registration Act, as passed by its 1927 legislature. In substance, that state requires every practitioner of the healing arts who has been *licensed* by any of its several Examining Boards, to register on the first day of each year with the Florida

State Board of Health on forms prescribed therefor, and pay a fee of one dollar. Whereupon said Board of Health shall issue the applicant a registration certificate which must be conspicuously posted in the place where the applicant conducts his office.

Incidentally, when primary application is made for such registration, the form required to be filled in, in addition to much other information, also requires the applicant to disclose his residence and place of practice for ten years past, if in practice that long. The statements contained in the application must be made under oath.

Now let us briefly analyze that act from both the medical and legal points of view: First of all, its terminology can never be construed or interpreted as class legislation of an unconstitutional nature because it affects equally all practitioners of the art of healing, leaving no loophole for attack on that ground. Furthermore, if the act is to be used as a means of gaining revenue, it is also most equitable because it distributes the financial burden among all alike regardless of their school of practice.

Secondly, the act being administered by the State Board of Health, rather than by examining boards, prevents the possibilities of questions of favoritism towards any one class of practitioners from arising. The act gives the authorities some data of the practitioner's previous activities, and keeps check on his whereabouts annually. The requirement that registration certificates be kept conspicuously posted also aids the inspectors in readily distinguishing at a glance lawful practitioners. Finally, the fact that the statements on the application blank must be made under oath, is particularly valuable and significant in Florida because their statutes make false statements under oath an offense punishable like contempt of court, in that officials empowered to take oaths are deemed judicial officers.

Now let us briefly review the shortcomings of this act. First, take notice that the statute states that all who are *licensed* must also register. That is all inclusive and takes in those who practice in Florida as well as those who may be practicing in other states, or not at all. Such terminology immediately brings up serious legal difficulties involving the jurisdiction of Florida courts over licensed practitioners who may be residing in other states. In fact, so far as these are concerned, enforcement of this act becomes legally impossible. Then again, assume that a practitioner holds licenses in half a dozen states, as some do, and if each of these states were to enact similar legislation, what unfair taxes would be imposed upon him for being so licensed. Had this act been made to include only those who *practice* within the state, instead of those who are *licensed* to practice therein, then that unfair and unenforceable aspect of this act would have been obviated without in the least impairing its efficiency.

Secondly, the act requires registration on the first day of each year. Fine! Dr. Smith, who has a license to practice in Florida, but who happens to reside in Boston, registers as required by law on the first day of January, and on the first day of February he opens an office in Jacksonville. In that case he has absolutely complied with that annual registration act, and yet the State Board of Health has no legal way of knowing where he is practicing for eleven months in the year—nor can they compel him to disclose that information. Such a situation practically offsets the fundamental object of that act, and might have been made entirely impossible by simply inserting a clause to the effect that notification must immediately be made of *every* change in address.

From the foregoing very brief analysis, pro and con, of one representative annual registration act, it becomes evident that much depends upon careful terminology together with what other statutes may already exist to either aid or antagonize such acts, as to their value and effectiveness. It is sad, but true, that much medical legislation is notoriously legally illogical, frequently unenforceable, and sometimes unconstitutional, due chiefly to slip-shod terminology that is abstract rather than concrete. The only reason why some of it remains on the statute books is because those whose rights it infringes upon are either too poor or too docile to carry their cases to the courts of last resort. The crying need is for better laws, and better enforcement of existing laws.

As to the desirability of an annual registration or similar act for Massachusetts: that depends entirely upon its object. If the recently proposed act was intended to enable the Board of Registration in Medicine to have up-to-date rosters of practicing physicians, and also to procure revenue to enable the apprehension and prosecution of illegal practitioners and quacks, then that act contained some serious shortcomings.

Compared with the Florida act, for instance, it savored of class legislation in that it applied only to those practicing one branch of the art of healing and exempted the others. That leaves open a loophole for future attack on constitutional grounds. Secondly, as worded, the act contained the same weakness as the Florida act insofar as it made possible, not a complete and continuously accurate roster of practitioners, but only a roster that would be accurate once a year. Why? Because it failed to require immediate notification of change of address.

Then again, as a revenue-producing act, it was both unfair and weak. Unfair because in Massachusetts, and notwithstanding considerable publicity to the contrary, most quacks and illegal practitioners are not practitioners of medicine, and it is therefore unfair and inequitable to make medical practitioners bear the entire burden of raising the revenue to prosecute such offenders. The act was weak in that it failed to specifically state in unambiguous language in precisely what manner the revenue was to be spent and such abstract revenue-producing legislation is invariably dangerous.

Moreover, existing Massachusetts statutes require that every licensed physician must immediately register with the clerk of the city or town where he practices, and statutory regulations prescribe that such clerks shall immediately report such registration to the State Board of Medical Examiners. This, it would seem, is ample means of keeping continuous tabs and check on all licensed medical practitioners.

True, in Florida too all licensed practitioners of every school must record their licenses with the county court clerk where they intend to practice; but their statutes provide that the clerks of the court need only forward the reports of such records to the Board of Medical and all other Boards of Examiners once a year.

From the aforementioned few illustrative points involved, together with a fairly detailed study made

of several so-called Annual Registration Acts, the writer is of the opinion that a *real* registration act would be desirable in Massachusetts, but believes that:

1. It should require registration of *all* who practice any branch of the art of healing, irrespective of school or method.
2. That if the act is not primarily intended to be revenue-producing, it should require a first registration, and another only each time thereafter when a change of address is made. In that way a complete and continuous roster is made possible.
3. If the act is primarily revenue-producing, then annual registration is to be desired, and additional registration each time a change of address is made.
4. The act should be specific, concrete and unambiguous in its requirements and terminology.
5. The revenue received from such an act should be applied *only* to paying salaries and expenses of special investigators engaged in apprehending and prosecuting illegal and fraudulent practitioners; and such must specifically be stated in the act.
6. The administration of the act should, by preference, be delegated to the State Board of Health rather to any group of examining bodies.

An act incorporating these principles, properly constructed and rigidly enforced, would undoubtedly benefit both the public and professions alike.

CARL SCHEFFEL, M.D., LL.B.

COMMENTS ON THE EDITORIAL "THE POT AND THE KETTLE"

40 Court Street, Boston,
March 21, 1929.

THE NEW ENGLAND JOURNAL OF MEDICINE:

Your editorial of Feb. 14—The Pot and the Kettle—has come to my attention. In writing you, I am not seeking to record a protest against anything which you have said. Rather, I should be inclined to express appreciation of your general point of view, as to publicity policy.

The confectionery industry does resent certain features of the American Tobacco Company advertising but we have no inclination to enter into any debate as to the health value of cigarettes. I take it that your reference to a war between two great corporations is not based on the supposition that we are engaged in such a contest.

We are, of course, competing with many other industries for a share in the consumer's dollar. It is the intent of those who are directing our publicity to make no representations which are not approved by competent medical authority.

Your reference to diabetes is doubtless directed to *over indulgence* in food in general and not to sweets in particular. Among your readers, I am sure that this will not be misunderstood.

Very truly yours,

OLIN M. JACOBS, *Secretary*,
New England Manufacturing Confectioners Assn.

NEWS ITEMS

DR. L. K. FRANKEL PREDICTS THE CONQUEST OF DIPHTHERIA—At the New York Health Conference held recently nearly all of the closing session was given over to a discussion of the problems incident to diphtheria immunization. Doctors and the laity were alike blamed for the mortality rate of diphtheria among children.

Dr. Frankel, Second Vice-President of the Metropolitan Life Insurance Company, expressed the opinion that diphtheria could be banished as a cause of death among children by 1932 provided that an intensive educational campaign is carried on among mother's clubs, parent-teacher's associations and other organizations. He contended that fear on the part of mothers and children constitutes the great barrier to progress. Dr. Shirley W. Wynne, Health Commissioner of New York City, scored the medical profession for failure to instruct the families under their care.

VACCINE TO COMBAT SPOTTED FEVER—Vaccine for Rocky Mountain Spotted Fever is ready for distribution by the United States Public Health Service laboratory in Hamilton, Montana. No charge will be made to physicians who apply for this vaccine.

APPOINTMENTS OF NEW ENGLAND MEN TO PLACES IN THE MAYO CLINICS—Dr. John M. Fallon has been appointed as first assistant to Dr. W. J. Mayo, in the General Operative Service of the Operative, Diagnostic and Laboratory Work for the quarter which covers January, February, and March, 1929.

Dr. J. C. McCann has been appointed a second assistant in the service of Dr. V. C. Hunt in the general operative service of this department specified above.

THE CANCER CAMPAIGN IN AUSTRALIA—According to reports published in the daily press, the study of cancer in Australia has been to a considerable extent concentrated on the use of the lead colloid according to the plan set forth by Blair Bell.

AN AMERICAN ENDOWS A CANCER HOSPITAL IN VIENNA—Mr. Canning Childe of New Jersey has given one hundred thousand dollars to establish a cancer research institute in connection with a Vienna Sanitarium. The technical details will be under the supervision of Dr. Adolf Edelmann, who recently treated Mr. Childe.

A PROPOSED GIFT TO THE CHILDREN'S HOSPITAL OF BOSTON—A campaign is underway organized by the Alumnae of the training school for Nurses of the Children's Hospital to raise one hundred thousand dollars to furnish a complete floor in the new nurses' home and school. This will be a gift to the fund now being raised for the hospital. Mrs. Lawrence Stewart is Chairman of the committee of the alumnae.

The plans for the nurses' home consist of a building with 240 bed rooms; class rooms, living rooms, library, alumnae room and a large assembly room.

NOTICE

UNITED STATES PUBLIC HEALTH SERVICE.

CHANGE OF DUTY AND STATION OF COMMISSIONED OFFICER OF THE UNITED STATES PUBLIC HEALTH SERVICE IN NEW ENGLAND.

Associate Sanitary Engineer Leonard Greenburg,

U. S. P. H. Service has been directed to proceed from New Haven, Conn., to Hartford, Conn., and return, to present paper on ventilation before a meeting of the New England Health Institute, April 22-26.
March 7, 1929

REPORTS AND NOTICES OF MEETINGS

HARVARD MEDICAL SCHOOL

The Harvard Medical Society held a special meeting on Friday evening, Mar. 15, 1929, at the Peter Bent Brigham Hospital. Dr. Cecil Drinker presided.

The first case was presented by Dr. Engelbach of the medical service. The patient was a 21-year-old American girl who came into the hospital complaining of swelling of her legs. Her past history was irrelevant up to 3 or 4 years ago when she began to have several attacks of sore throat every winter. Last October she had a sore throat and she began to notice swelling of her ankles. The edema spread upward to the level of her breasts. Treatment both with digitalis and low protein, salt-restricted diet did no good. Coming into the hospital a month ago, the findings were typical of that called nephrosis. She had marked edema with free fluid in both chests and in the abdomen, a secondary anemia, and a low white count. Her urine showed a large trace of albumen, and was relatively free from casts. Her blood cholesterol was high, the albumen-globulin ratio reversed, and the blood urea was 11 mgms. She had not responded to Epstein's high protein diet treatment, and was then on a low protein diet. No diuretics had been used, though her edema was about the same.

The second case was presented by Dr. Bowen of the surgical service. The patient was a 54-year-old Russian male who complained of pain on urination. His family and past history were irrelevant except for gonorrheal arthritis ten years ago and a recurrence ten months ago. His present illness began eight or nine months ago with a burning pain in his urethra on voiding and nocturia with frequency in the daytime. He had difficulty in voiding for the last 3 or 4 months. Physical examination showed some obesity, an enlarged prostate; the laboratory tests showed a normal blood, urine containing a few white and red cells with albumen, a normal phthalein, and a residual bladder urine of 100 cc. Catheter drainage was impossible because of urethral irritability and lack of co-öperation. He has improved greatly in the hospital without treatment and is almost ready for operation.

The case was shown in contrast with those types with the same etiology and more marked symptoms. These cases show a very high residual foul urine, high B. U. N., low kidney function, and a high blood pressure. Here drainage is necessary but is sometimes followed by alarming symptoms: the blood pressure falls markedly, the kidney function diminishes almost to zero, and the B. U. N. goes very high. After a short time a balance is established and operation is indicated.

The paper of the evening was presented by Dr. A. N. Richards from the Department of Pharmacology, of the University of Pennsylvania. His subject was "Some More Experiments on the Function of the Kidney." In his paper he continued his discussion of kidney function presented four years ago before this society. Due to the fact that the results of his experiments have not yet been published, no report of them is permitted. Suffice it to say that many interesting points were discussed and one awaits with anticipation a report of Dr. Richards's experimental studies.

AMERICAN HEART ASSOCIATION, INC.
(Member of the National Health Council)

March 18, 1929.

THE NEW ENGLAND JOURNAL OF MEDICINE:

The Scientific Meeting of the American Heart Association will be held on Tuesday, July 9, 1929 from 2 to 6 P. M. in the Auditorium of the Woman's Club, 448 Taylor Street, between 12th and 13th Streets, Portland, Oregon.

Very truly yours,
I. C. RIGGIN, M.D.,
Executive Secretary.

BOSTON CITY HOSPITAL CLINICAL MEETING

MARCH 30, 1929, CHEEVER AMPHITHEATRE
11 A. M. TO 12:30 P.M.

11:00-11:10	*Dr. William R. Ohler.* II Medical Service. Case of Refractory Edema.
11:10-11:25	*Dr. Franklin W. White.* II Medical Service. Case of Gall Bladder Disease in a Young Man.
11:25-11:45	*Dr. Townsend W. Thorndike.* Dermatological Service. Hints on Prophylaxis of Syphilis.
11:45-12:00	*Dr. Thomas J. O'Brien.* III Medical Service. Medical Treatment of Bleeding Peptic Ulcer.
12:00-12:20	*Dr. Irving J. Walker.* V Surgical Service. A Two-stage Operation for Certain Cases of Common Duct Stone.
12:20-12:30	*Dr. Burton E. Hamilton.* II Medical Service. A Case of Prolonged Rheumatic Fever.

WORCESTER NORTH DISTRICT MEDICAL SOCIETY

The Fellows of the Society are invited to be present at a meeting to be held at Burbank Hospital, Fitchburg, Friday, March 29, 1929, at 8:15 P. M.

The Wachusett District Dental Society will present a speaker whose work is known all over the world—V. H. Kazanjian, M.D., D.M.D.

Illustrated subject:—"Traumatic Surgery of the Face including Treatment of Maxillary Fractures".

Refreshments.

J. H. KEARNEY, *Pres.*
C. H. JENNINGS, *Sec'y.*

STAFF MEETING OF THE MASSACHUSETTS GENERAL HOSPITAL

A staff meeting of the Massachusetts General Hospital will be held in the Moseley Memorial Building on Thursday evening, April 4, at 8:15 o'clock. The program will be as follows:

1. Demonstration of cases.

2. Dr. Aub will talk on his recent experiences in European clinics.

3. Dr. Lawson and Dr. Mallory: Cholecystitis in typhoid carriers and the results of treatment by cholecystectomy.

4. Dr. Lawson: Report of two cases of gonococcus infection in operative wounds.

5. Dr. Mallory: Benign and malignant smooth-muscle tumors of the stomach.

Doctors, medical students and nurses are cordially invited to attend. This meeting concludes the staff meetings for the year.

COMMITTEE ON HOSPITAL MEETINGS.

SOCIETY MEETINGS

Combined Meeting of the Boston Medical Library, the Suffolk District Medical Society, the Middlesex South District Medical Society and the Norfolk District Medical Society (at Boston Medical Library at 8:15)

April 24, 1929—Annual meeting. Speaker, Dr. Walton Martin, New York City. Title to be announced later.

The medical profession is cordially invited to attend this meeting.

March 30—Boston City Hospital Clinical Meeting. Complete notice appears on page 685.

April 4—Massachusetts General Hospital, Staff Meeting. Complete notice appears on page 685.

May 5-10—First International Congress on Mental Hygiene. Complete notice appears on page 411, issue of February 21.

June 13—International Hospital Congress. Complete notice appears on page 312, issue of January 24.

July 9—American Heart Association. Detailed notice appears on page 685.

October 7-19—New York Academy of Medicine. Detailed notice appears on page 468, issue of February 28.

DISTRICT MEDICAL SOCIETIES

Barnstable District Medical Society

Meeting: May 2, 1929.

Bristol North District Medical Society

April 18, 1929—Spring meeting.

Essex North District Medical Society

May 1, 1929 (Wednesday)—Annual meeting at Lawrence General Hospital, One Garden Street, Lawrence, at 12:30 P. M. (Telephone 5156.)

May 2, 1929 (Thursday)—Censors meet at Hotel Bartlett, 95 Main Street, Haverhill, at 2 P. M. (Tel. 3430.)

Candidates should present their diplomas one week in advance to the Secretary, J. Forrest Burnham, M.D., 567 Haverhill Street, Lawrence.

Essex South District Medical Society

Wednesday, April 3, 1929—Essex Sanatorium. Clinic at 5 P. M. Supper at 7 P. M. Speaker: Dr. Fred Albee of New York. Subject: Automatic Machinery in Bone Surgery. Discussion from the Floor.

Thursday, May 2, 1929—Censors meet at Salem Hospital, 3:30 P. M. for examination of candidates. Candidates should apply to the Secretary, (Dr. R. E. Stone, Beverly) at least one week prior.

Tuesday, May 14, 1929—Annual Meeting. The Tavern, Gloucester. Speaker: Dr. O. F. Carr, Beverly, Trip around World, Illustrated. Ladies invited. Dancing.

Franklin District Medical Society

Meeting will be held on the second Tuesday of May.

Middlesex East District Medical Society

The following schedule of meetings has been arranged:

March—Reading.
May—Melrose.

Subjects and speakers to be arranged by committees in each city or town.

Middlesex North District Medical Society

The annual meeting will be held the last Wednesday in April.

Middlesex South District Medical Society

April, 1929—Annual meeting. Definite date to be announced later.

Norfolk District Medical Society

Below are the proposed meetings of the Norfolk District Medical Society for the 1928-29 Season. The schedule below will be adhered to as strictly as possible. The carrying out of the proposed plan will, of course, depend upon the acceptances of invitations extended to the speakers. Minor changes may be necessary.

March 29—Roxbury Masonic Temple. Detailed notice appears on page 631, issue of March 21.

May—Annual meeting program to be announced.

The Censors of the Society meet **May 9, 1929**, at the Roxbury Masonic Temple, Warren Street, Roxbury, at 4 P. M., for the examination of candidates.

Plymouth District Medical Society

April meeting at the Commercial Club, Brockton, April 18th, at 6 P. M. Annual Oration by Dr. Ralph C. McLeod, Orator; dinner.

Suffolk District Medical Society

See Combined Meeting in previous column.

Worcester District Medical Society

April 10, 1929—Grafton State Hospital. Program to be announced.

May 8, 1929—Annual meeting. Worcester Country Club.

Worcester North District Medical Society

March 29—See page 685 for detailed notice.

Annual meeting the fourth Tuesday in April.

BOOK REVIEW

Imperative Traumatic Surgery. C. R. G. FORRESTER. New York. 1929. 464 pp. 598 ill. Paul B. Hoeber, Inc. Price $10.00.

The author states that in choosing the title "Imperative Traumatic Surgery" he considered it was more descriptive than the title "Industrial Surgery" which he had first contemplated. The text is concerned with the methods of handling the fractures and dislocations which are ordinarily met with in an industrial plant. The description of the various lesions is accompanied by excellent illustrations and reproductions of roentgenograms. The directions for the immediate treatment which can be applied at the time of injury are very explicit. In addition, the complications are discussed briefly and emphasis placed on prognosis or the time of disability.

The material of the text is limited to a consideration of head injuries and injuries of bones and joints with only a few pages devoted to peripheral nerve injuries and osteomyelitis. Consequently the title would be a fairer index of the contents of the book if it read "The Imperative Treatment of Fractures and Dislocations." If the book is to find a place as a handbook for the busy industrial surgeon it is suggested that certain of the discussions involving elective operative procedures in the late treatment of fractures might well give way to a consideration of such imperative problems as tendon repair; the treatment of burns, thermal and chemical; the treatment of eye injuries and various other conditions which appear frequently in large industrial plants.

The book will undoubtedly find a place as a ready reference manual for the treatment of fractures and dislocations. As such, however, it must compete with several more complete and authoritative treatises which have appeared in new or revised editions during the past few years. With the changes mentioned, the treatise could be made an outstanding work on traumatic or imperative surgery.